THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

Vol. 40, No. 11 | 540 N. Michigan Ave., Chicago, Ill. | July, 1941

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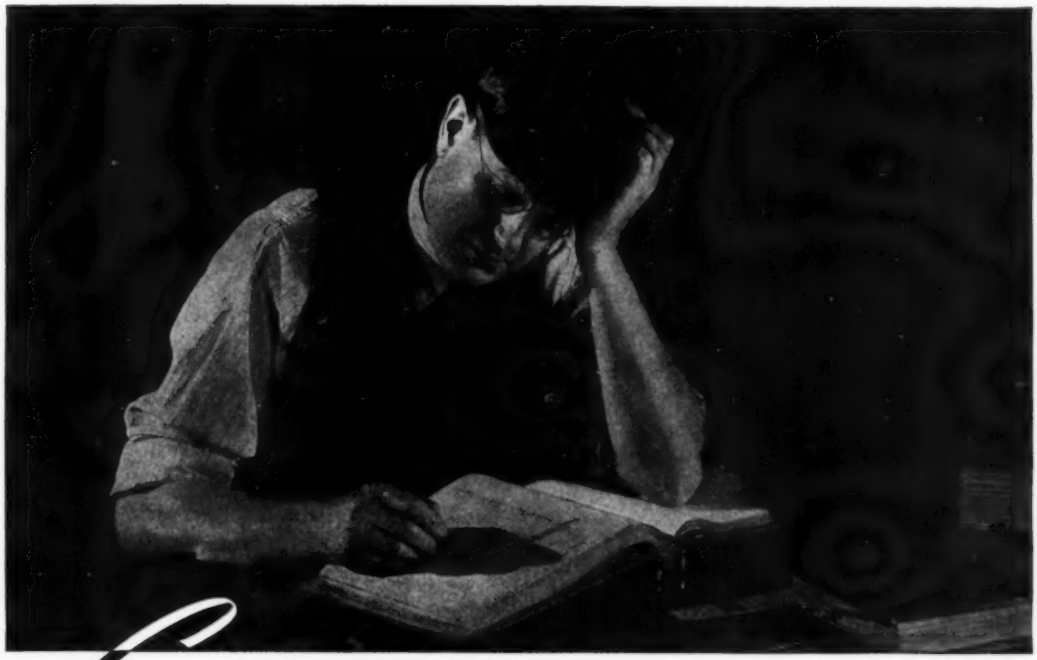

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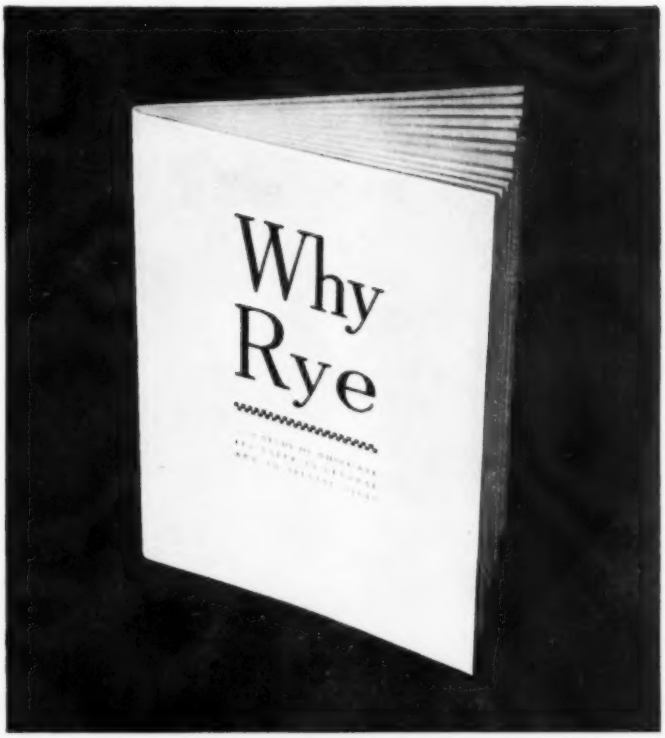

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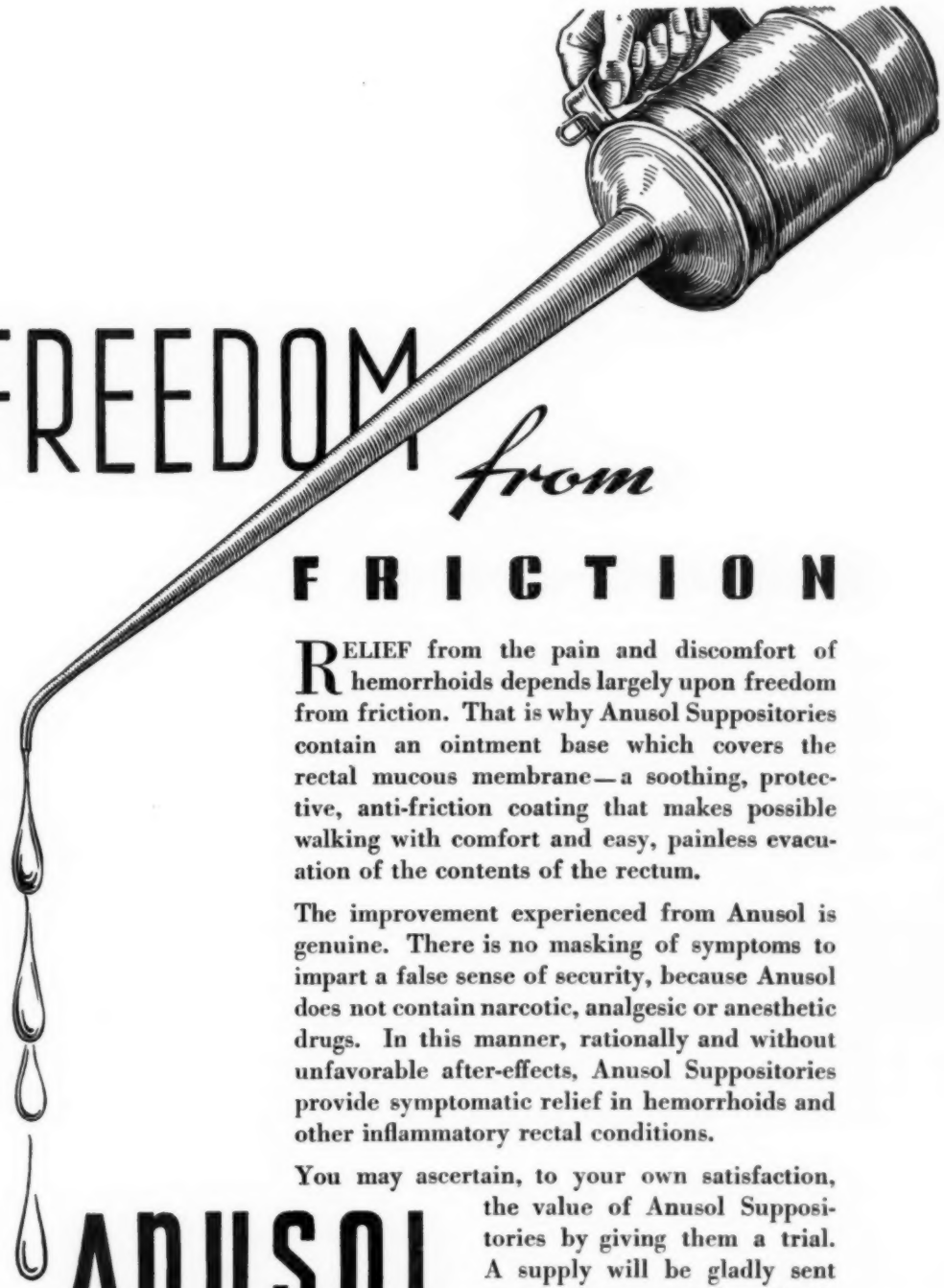

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Osteopathic Magazine for August

SUMMER EAR INFECTIONS

Lloyd A. Seyfried, B.Sc., D. O.

A timely article by an osteopathic specialist pointing out that swimming, in spite of its many healthful advantages, is a potential source of middle ear and mastoid infection, telling how such infections can be prevented, and how they should be cared for.

WHAT IS OSTEOPATHIC DIAGNOSIS AND TREATMENT?

J. A. van Brakle, D. O.

A discussion of the distinctive factors which make osteopathic examination and care different from that of other schools, answering in a logical manner questions often asked by new-comers to osteopathy, and making clear the role of the osteopathic lesion in disease.

OSTEOPATHIC
MAGAZINE

AUGUST COVER

MY FIRST VISIT TO DR. STILL

William Smith, M. D., D. O.

August is the birth month of Andrew Taylor Still. In this issue we republish portions of an article by one of the first graduates of the American School of Osteopathy, who was thereafter for a number of years its Professor of Anatomy. The article gives his impressions of Dr. Still as he first knew him in 1892.

OSTEOPATHY AND NEURITIS

G. N. Gillum, B. S., D. O., F. A. C. N.

A discussion of the causes and symptoms of neuritis, and of the osteopathic approach in diagnosis and treatment of the condition.

DO YOU LEAN ON YOUR ELBOWS?

Lottie E. Wright, D. O.

An interesting case report of a man who developed osteopathic lesions repeatedly in the upper part of his back through faulty posture in driving, explaining how such derangements can affect health. All who drive can easily take its lesson to themselves.

HELP FOR HAY FEVER

Elizabeth Fraser

Hay fever is shown to be one of the commonest and most annoying of the allergic diseases. The relief which may be obtained from early osteopathic care in preparing the system for the attack to come later, and from routine care during the hay fever season is emphasized.

CASTOR OIL—SO-CALLED "HARMLESS"

This all too commonly administered household remedy is shown to be a menace to life when indiscriminately used, especially in the presence of abdominal pain which may be a symptom of acute appendicitis.

VIOLINIST GETS D. O. DEGREE

A human interest story about the first violinist of the Philadelphia Orchestra who this spring obtained his D. O. degree, thereby realizing a life-long ambition of becoming a doctor. The story is reprinted from the *Philadelphia Bulletin*.

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Osteopathic Health No. 140

NATURE'S WAY TO HEALTH

This excellent article describes the rise of osteopathy, the education of an osteopathic physician, and the scope of the practice of osteopathy.

LORDOSIS AND ITS TREATMENT

What treatment an osteopathic physician would give for "swayback" is discussed, and certain exercises beneficial in this disorder are described.

THE ACIDOSIS BUGABOO

The article defines the term and tells how the body provides for the counteraction of excessive acid. The article brings in the role that osteopathic manipulative treatment may play in overcoming the condition.

VACATION HINTS

What to do in case of drowning, sunstroke, poison ivy, broken bones, and burns.

O. H. NO. 140 (AUGUST)

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President's Address*

F. A. GORDON, D.O.
Marshalltown, Iowa

The American Osteopathic Association meets today in its forty-fifth annual convention. Preceding conventions have been notable for the technical enlightenment which devoted members have provided, and for important decisions required of your elected representatives. Each year has recorded definite progress, for which we all are very thankful. Even as scientific disclosures open new potentialities, so do the achievements of organization effort manifest our capacity for developments. We are thankful for new problems growing out of scientific endeavors, and out of organization effort this year, and for scientific workers and organization representatives who are seriously concerned over momentous issues.

Problems confronting some of your Departments, Bureaus, and Committees this year loomed up as veritable mountains. But that did not deter your faithful servants. Patient and persistent effort has resulted in definite and substantial progress on all fronts. Only by careful study of the all too compactly condensed reports, which will be published in a forthcoming issue of the Association's JOURNAL, can each member gain any appreciation of the volume and effectiveness of the work accomplished. To each chairman separately, and to all collectively, let me say—Thank you, sincerely.

During the year I have enjoyed meeting with a majority of the members of our divisional societies in their annual conventions. It is most encouraging to note the progress being made generally in the states and provinces. Honorable mention this year goes to Arizona, where every one of the total membership of eighteen supports organized effort on the basis of an agreed percentage of his gross income. Their professional ability was endorsed by the Arizona legislature this year with a new practice act and an independent board. As a former divisional society secretary let me apprise all divisional associations of the tremendous value which will accrue to your organizational program from sending your secretary to the Central office annually for a week of conferences.

Probably the greatest inspirations of the year came with my visits to each of our approved colleges. The splendid work of these schools deserves the prompt endorsement and fullest cooperation of each alumnus. Visit your alma mater this year.

The year 1940-41 will long be remembered. It was an eventful year. Membership is the largest in our history. More members are accepting more personal responsibility in fundamental problems than ever before. There have been some controversies, yet at no time in our history has the need for coordination of effort been better exemplified or ultimate cooperation more richly rewarded.

I desire to express my deep appreciation for the hearty cooperation so willingly and promptly extended during the year by Dr. R. C. McCaughan, Dr. Ray G. Hulburt, Dr. C. N. Clark, Miss Rose Mary Moser, Mr. Harry E. Caylor, and their loyal assistants in the Central office. Let us not forget that more than our willing approbation is long past due if we would retain this precisional service.

With due regard for other notable achievements during the year, the outstanding example of volunteer service to the profession for 1940-41 is that of Dr. Chester D. Swope, Chairman of the Public Relations Committee. None can estimate, until he has served on his Committee, the extraordinary contributions which he and his assistants are making to our program.

These troublous times impress upon us with new force the significance of that fundamental concept; whatever is best for the public is best for our profession, and ultimately best for the individual member. It is therefore of very real importance to each of us that we gear our thinking to the present problems of democracy and how we best can serve in the program of its defense.

The essential concept of democracy is the importance of each individual human being, regardless of class or condition. A completely democratic system would assure each individual equality of opportunity and equality of rights in the institutions which control his life and work. Democracy, restricted to its political meaning, is incomplete, however, until we carry it on into its economic and social implications. The right of all to earn an adequate living and the opportunity for a complete education should be the natural corollary to freedom. For a well-rounded education is the best assurance that having this freedom we will

*Delivered before the General Sessions at the Forty-Fifth Annual Convention of the American Osteopathic Association, Atlantic City, June 23, 1941.

use it wisely, and an adequate living means more nearly adequate medical care and concomitant reduction in our ten billion dollar annual cost of illness and premature death.

The eternal problem of the right to make a living is still unsolved in most democratic countries. The problem was hopeless in the age of scarcity preceding the agricultural and industrial revolutions of the nineteenth century. Even after the discovery of machines and scientific methods of production had opened up the prospects of an age of abundance, no hurried solution could be expected. In the problem of poverty, with its pronounced effect on health through sanitation and nutritional deficiencies, we find the origins of most of the present troubles of this turbulent world.

In Europe, it has led to despair of the slowness of democracy, and thence to communism, fascism, and war. Progress of democratic ideals there was checked by those who argued that democratic governments had done very little to give economic security to their citizens.

Our country is not free from the conditions which cause disintegration of loyalty to democratic ideals. Democracy abroad was rejected chiefly by the poor, by some of the frightened wealthy, and by the angry patriots, who were following pied pipers in "shirts" of various colors. Our economic system rolls on, without sufficient regard for the consequences to human beings, a condition that baits the saboteurs of democratic ideals and encourages dissension and disunity.

Can we disentangle our economic system from the traditions and habits of the age of scarcity and give it a social direction and purpose? Can we unite and concentrate the will of our democratic majority in support of a really effective program? Can we do it before the masses of our people become impatient and lose confidence in democratic procedure?

The arts and sciences of health and healing are properly of the public domain, that is practice of the human arts and sciences should be open to all those who qualify, and these arts and sciences must exist not for the benefit of guilds, but for the benefit and welfare of the people. If schools of medicine are not to become caste systems open only to the very wealthy, the necessary training must be financed more and more by tax subsidy and public-minded philanthropy. On the other hand, the state and society may rightfully expect that money diverted to the training of physicians will be returned by doctors many-fold, in services and benefits to the people.

Osteopathic physicians have a special responsibility. They must study and understand in order to lead. But they must know that leadership in a democracy cannot be *for*, it must be always *with* the people. Our whole democracy depends on intelligent, active leadership, free from self-interest and upon informed and active participation of all people with such leadership.

There must be national cooperation for the good of all. All groups depend on each other. Only an organized system of cooperation can assure equitable rights to each group.

More importantly, only such cooperation can produce the national defense and economic security so essential. No advantage to any class or group is in the national interest. Special privilege and discrimination have always been un-American—undemocratic. Today they are subversive.

The appeal to reason, to the sense of justice, and to the sense of responsibility of American business and professional leaders has already produced important gains in national cooperation. Today, with draft boards, the Office of Production Management and the Bureau of Labor Statistics supporting Congressional designation of osteopathic physicians as necessary to the national health, safety and interest, we should and we will achieve more in service to our country. For, as is pointed out by these official bodies, there is now an increasing shortage of civilian physicians and until such time as the Medical Corps of the Armed Forces decides to make comparable use of conscripted osteopathic physicians, they should be and they are being deferred for service in their civilian capacity for the conservation of the public health.

In the modern crisis whose heroes are not alone the "unknown soldiers," but also the "unknown civilians," local doctors bear equally the brunt of battle. In our twofold task of national defense, osteopathic physicians, deferred as necessary civilian doctors, have a major responsibility for building up the defenses within our gates. Strengthening of democracy at home, knowing the needs and finding ways of meeting the health problems of the people, insuring that each community cooperates fully in all essentials of the Public Health, and that health hazards which accompany disaster are fully anticipated—these are the things which civilian doctors must do, and do better than they have ever done before. Since the public health is the aggregate of the health of a people, the aims and purposes of our policies and principles can be based on no firmer foundation than those edicts handed down to us by Andrew Taylor Still, the physician who was the first doctor of Osteopathy. Said he:

"Truth has no cause to fear opinions. It wants no flattery. It neither loves nor hates . . . Any variation from health has a cause, and the cause has a location. It is the business of the doctor of osteopathy to locate and remove it [the cause], doing away with disease and getting health instead."

Throughout the United States, an increasing number of osteopathic physicians are serving as public officials on state, county and city health commissions, boards and committees, and in various other capacities. This unselfish service is to be commended and encouraged. More and more state, county and local osteopathic groups are studying ways and means and submitting plans by which programs of health services administered by all public health officials can most effectively reach local citizens through interested local doctors. During this convention official delegates will consider specific recommendations concerning the responsibility of individual members to the public health. In fact the program of this convention is designed to focus attention on various aspects of this field in which the modern doctors render their greatest service to mankind. Until their professional services are requested in the military aspect of this defense program, their greatest

contribution, yes, their patriotic duty, is in defense of the home front.

I need not say to you that osteopathic physicians will play their part, that here in America—as elsewhere in the world—they will show the steady determination, the undramatic fortitude, and the long look forward which gives strength to today and direction to tomorrow. In this crisis osteopathic physicians will not be found wanting.

For osteopathic doctors know how great is their stake, not only in the outcome of the struggle for democracy, but in the method.

Doctors always have the job of converting the results of the impersonal economic system into the personal lives of their patients. For years prior to enactment of the 1940 "Year of Training," the osteopathic profession has endeavored to focus public attention on a program of "keeping fit." Nor are we surprised to learn from government reports that 40 per cent of the cream of American young manhood are found physically or mentally unfit by the examining draft boards, or that many of these rejections are for conditions which could have been prevented or can be corrected. Doctors have the daily task of making prompt and efficient services available, keeping abreast of professional advancement, and maintaining facilities and personnel compatible with comfort, convenience and security of community health needs.

If America is to be impregnable, it must be made supreme in both the military area and the civilian area. Men on the ships at sea, in the air, and in the land forces must be supported by a powerful civilian system. This means that our fundamental institutions must function to their best capacity. Our homes, our colleges, our hospitals, our churches, our public health services, our business institutions must maintain their strength and create a strong behind-the-lines system. Weaken this system and we will weaken the effort to be impregnable. Today 10,500 osteopathic physicians, six osteopathic colleges, 167 osteopathic hospitals and clinics and numerous State and local officers of health departments are making a great contribution in holding this major defense line.

Doctors should be forgiven if they think about their personal stake in this conflict between democracy and totalitarianism. They know that the rule of force never can be their way; that whatever satisfaction brutality and ruthlessness may bring to some who exercise it, to doctors it can mean only pain and suffering. For it is the role of doctors to minister to the health needs of human beings and to foster their development. Theirs is a perpetual battle against all forces which destroy or limit life.

Osteopathic physicians know, too, that their own chance for a full and effective life is bound up with the idea of democracy, which accords respect and opportunity to all. They know that their right to participate fully in the society of which they are a part, is now incompletely established, even where the idea of democracy has made its furthest progress. Only through the maintenance of democracy can osteopathic physicians retain the right to their identity which they have achieved and only by the extension of democracy can they extend that right and make it secure. For the answer to the question—where will osteopathy be and what will be its status when this crisis is past?—depends directly on the kind of society which emerges from the struggle.

So I cannot say too strongly, we, as osteopathic physicians, have the greatest responsibility and the greatest stake in the defense of democracy today and the building of democracy tomorrow. To this end, we must work shoulder to shoulder with our government. In so doing we must remember that the contributions which our doctors have made in crises of the past have laid a basis for the next step in their progress. It is the contribution which we doctors make today which must and will lead us on.

Today, we look out upon a world in chaos, distraught and torn by war. But tomorrow will come. What that tomorrow will be depends upon the sacrifices we make today. These sacrifices will not mean a loss incurred without regard. Whatever we may sacrifice will bring its rich reward in winning the struggle for democracy—to secure to ourselves and to our posterity the four essential human freedoms outlined by our President, Franklin D. Roosevelt: Freedom of speech and expression—Freedom to worship God—Freedom from want—which translated into world terms, means economic understandings which will secure to every nation a healthy peacetime life for its inhabitants—Freedom from fear—which translated into world terms, means that no nation will be in a position to commit an act of physical aggression against any neighbor—anywhere.

OPPORTUNITIES IN RURAL PRACTICE

Conclusions that the medical profession is overcrowded and that the condition can be relieved by reducing the number of students entering our medical schools, though correct for New York, Boston, Philadelphia, and Chicago, are invalid for the South or any other predominantly rural area. Over half of the 241 counties in the United States with inadequate medical service are in the ten southern states. The distribution of medical services, physicians, hospitals, and nurses is more important than their actual number. There is more hazard to the public and to the medical profession from scarcity of physicians in certain areas than from overcrowding in others . . .

At present, owing to the improvement in farming conditions, but more especially to the dearth of physicians and to the absence of competition, the incomes of the keener rural doctors often are equal to those of their urban brethren, and even better if the cost of living is considered . . .

—Wilbur C. Davison, M.D., "Opportunities in the Practice of Medicine," *The Diplomate*, April, 1941

President's Acceptance Address*

PHIL R. RUSSELL, D.O.
Fort Worth, Texas

In assuming the office of President of the American Osteopathic Association, I wish first to express my appreciation for the honor you have bestowed upon me. It is my hope that your confidence in me will be justified, and it is my intention, in the course of the next year, to render my thanks in something more than words—if possible, in constructive service to the profession. Many of you, I believe, expect the officers to do the impossible—to secure for them legislation and recognition as well as to conduct the business of the Association. Still others expect them to do just nothing at all. I say that we fit in neither category. We have our limitations; we cannot do all, but we will not sit idly by and do nothing. We will do our best, if you will do your part and cooperate.

Needless to say, you have placed a great responsibility on my shoulders. I do not begin without apprehension; in fact, I should not have begun at all if I did not feel that this work you have laid before me is the greatest service I can offer to my friends, my profession, and the general public. Having accepted the office, I am determined to work for you, and through you, for health service to humanity.

I am convinced that only through you can the general public receive the best physicians' care and the greatest protection from discriminating groups. Only through you can therapeutic practice be kept free from the stifling dogmatism of medical uniformity. You are a pioneer group; you are the men who were independent enough to strike out on a new path. You are the disciples of a man who had the vision and courage to re-examine the old teachings and to discover a new principle. You have had to fight for recognition of that principle, and you will still have to fight. If I am in any way qualified to be your leader, it is because I, too, have fought and because I am convinced of the values for which I am fighting. Let me define those values, as my mother defined them for me. A pupil of Dr. Andrew Taylor Still, my mother caught the real message of the great teacher: that the physician's first duty is to the patient; that the profession must mean more to a physician than a livelihood; that it must mean a calling of self-sacrifice, in which all personal gain, pet dogmas and theories of practice should be cast aside in the interest of public health. To this belief she dedicated her life; for it she gave her life. For her, the fight for osteopathy was a fight for freedom of the physician to choose the therapeutic measure which will restore health. And so I define the fight of the osteopathic physician as a fight for freedom. The aim is the destruction, not of any sect or creed, but of stagnant conformity.

We have stirred the stagnant waters, we have broken from the allopathic school of practice, which held our experimentation in contempt. Their failures, where osteopathic physicians have succeeded, offer adequate illustration of that deservedly famous maxim: "There is a principle which is proof against all arguments and which cannot fail to keep a man in everlasting ignorance—that principle is contempt prior to investigation." Blindly contemptuous, the allopaths clung to the tradition of chemical, palliative, and symptomatic treatment, until years of practice by the pioneer disciples of Dr. Still have demonstrated the success of osteopathic principles, proved them so well that they are more and more being adopted by the allopaths themselves. But our fight is not yet won. Conformity to tradition still blocks the osteopathic profession in more than half the states in the Union.

Even among our own profession there are those who, forgetting the true principles of osteopathy, have become mere peddlers of drugs. They have fallen prey to the high pressure salesmanship of the detail man. They have prescribed pills and extracts, without having made a thorough investigation of the physical action of the chemical and without having weighed the ultimate effects of the drug on the natural forces of the human body. Men like these constitute a real threat to our cause and to the public health.

I would not have you conclude that I stand for a limited practice. I do not denounce drugs unconditionally. I believe that the health of the patient should be put before any school or theory of practice. Let us not be among those whom the above maxim relegates to everlasting ignorance. Let us investigate, and when we have proved the worth of a therapeutic measure, let us use it; but we should never lose sight of the real cause of disease from the osteopathic viewpoint. In the application of any therapeutic measure, the ultimate effect upon the body should be our first consideration. The field of medicine has been ravaged by profit-seekers. Drugs and palliative therapeutics, along with the major part of surgery, have been stuffed down the gullible public, which is still full of superstition and credulity.

There comes to my mind a statement made by what I term a true physician of the allopathic school —I think, one of the greatest it has ever been my privilege to know. I quote his statement, not as a personal triumph, but in support of the osteopathic theory and as a warning to the osteopathic physician who has forgotten his basic teaching. The story is simple. The case in question is analogous to many a case you know. I had a patient who came to me after he had been given six months to live. For six years I treated him, but still not satisfied with results, I took him to one of the largest M. D. institutions in the country. I was seeking advice and help. I received there only endless experiments and bad results. In despair, I insisted on a consultation with the allopath whose judgment had been so highly recommended to me. I shall never forget the tedious hours he spent in studying the history and well-kept charts of this case, after which he asked the four consulting physicians of the institution what they thought. Their reply was that nothing short of a miracle could have kept the man alive for six years. But the consulting physician understood what the miracle was. "Gentlemen," he said, "call it a miracle if you wish, but I

*Address of incoming President following installation ceremony at the Forty-Fifth Annual Convention of the American Osteopathic Association, Atlantic City, June 27.

tell you it was not so much what was done for this patient, as what was not done, that is responsible for his being alive. Better stop experimenting and turn the patient back to the physician who, although respecting all therapeutic measures, yet fears the consequence of an incautious experimentation—who values the life and health of his patient above any fixation of a particular school of practice." May I pledge this Association to that thought, and may our schools never grant a degree of Doctor of Osteopathy to any one until that thought is thoroughly planted in his mind.

I have been speaking of large issues and far-reaching ends, but I realize that only the immediate present is ours, and with the present we must deal. Only with specific plans can we win our fight; only with chart and compass can we reach a destination. And so, as your leader, I shall attempt to chart a direct route and to outline for you what I have set for road markers. To reach the destination requires much machinery, supplies, money, man-power, will-power, coordination, and cooperation, and we must know the destination. As your President, I feel that I should give you a destination or shall I say, a platform for the year. At least you should know some of the things I stand for.

I do not expect you to agree with my every thought and proposal. I would not have you do so. I want to give you something to think about, and I expect you, if possible, to shoot it full of holes, or to adopt it, if you think best. I insist that every member of the profession have some suggestion for the benefit of the profession and to fight for that suggestion, right or wrong, so that in the end we may reach a decision for the best interests of all. I would not have this year one of perfect harmony of ideas. I invite constructive criticism, frank and open opposition among our members; and when the smoke of battle has cleared, I expect us to have reached a decision, and to face the public, or any opposition to our cause, with cooperation and a united front. This is progress, and the only way it can be had. With this in mind, I give you my ideas for the coming year:

1. I wish to pledge the Association to the principles of the democratic form of government as typified by the United States, and to put the entire force and effort of the American Osteopathic Association in active support of these principles. We shall fight, and fight hard, for the right to serve the country in the capacity for which we are best fitted, but in the emergency of the day, we must not hesitate to serve in *any* capacity in order to maintain the American Way, as exemplified in the Constitution of the United States.

2. I pledge myself to attempt, through leadership, to commit the osteopathic profession to:

(a) Fundamental principles of osteopathy and a realization that the reason, and the only reason, for osteopathy is the failure of the allopathic school of medicine to provide a complete system of practice.

(b) A recognition of the fact that the organized allopathic school, as attested by the American Medical Association, has set as its goal the destruction of every separate school of practice that is not under its domination.

(c) An understanding that any compromise with the American Medical Association means certain destruction. We must maintain the distinct identity of osteopathy as indicated by the degree of D. O.

(d) A renewal of the old fight, imagination, do-or-die spirit of the pioneer osteopathic physicians.

(e) A reinforcement of that spirit with definite action, cooperation, and activity of every individual osteopathic physician.

(f) An acceptance of the fact that proper finance is a necessity to the accomplishment of what we so much desire. We must limber up the purse strings. I favor the increase of dues in order to eliminate the necessity of soliciting funds. I feel that inactive and nonsupporting members are worse than no members at all.

3. I hope to create better understanding between the American Osteopathic Association and the divisional and local societies. It is impossible for the A. O. A. to function without the cooperation of its divisional societies. Soon, and very soon at that, the divisional society will find it impossible to live without the support of the A. O. A. The failure to get better Federal recognition today is due to inertia on the part of the divisional societies and their failure to take advantage of, and interest in, the many social problems, as pointed out to them by the Public Relations Committee of the A. O. A. The time has arrived under the New Deal when all social, public welfare, and health problems are fast interlocking the states with the Federal government. The A. O. A. is setting up, as fast as possible, machinery to interlock the divisional societies with the national, as for example the Council on Defense and Preparedness, set up this past year in an effort to help the states succeed in working out the many social problems pointed out by the Public Relations Committee.

I state here and now that there has been a complete lack of conception on the part of most divisional societies of the magnitude of the A. O. A. problem and the ultimate result of their failure to take immediate advantage of the opportunity presented. There has been a lack of interest and cooperation on the part of the officers and membership of too many divisional societies. To illustrate this: I wrote each delegate, each president, and each secretary of the divisional societies, requesting them to write me, as president-elect, their problems and suggestions for the betterment of the profession and the association. I received thirteen replies from the presidents; six replies from the secretaries; thirty-seven replies from the delegates; and those who did reply had very few constructive proposals. They seemed to feel that everything was running satisfactorily. They lacked a realization of the problem and of the dangers ahead. What has become of the enthusiasm, fight, imagination, and love of the osteopathic physician for his profession? Do they feel so smug and secure in their present success that they cannot see the threat of ultimate destruction or absorption that they face in a field dominated by allopaths? I say to you that the members of the national and divisional societies had better take heed and handpick their leaders—men with vision, men who are peculiarly adapted to fill an office or committee assignment and who are willing to fight for a profession which has given them social and financial position.

I believe that the time is ripe for requiring dual membership in the national association and in the divisional societies.

4. I hope to promote better understanding and coordination with the allied societies representing the specialist groups of the A. O. A. They owe their very existence to the osteopathic profession and cannot survive without its support; nor will the A. O. A. survive without the support of these organizations and their individual members.

I wrote the president and secretary of each of these organizations for suggestions and criticism in behalf of the A. O. A. From each I received replies which prove that we must recognize them as progressive, hard fighting, and thinking osteopathic physicians. We are too few in number to exist without them and they cannot exist without us, yet I view with increasing alarm their tendency to pull away from the parent organization. There must be a reason for this situation. It must be found and corrected. The allied societies and their members must be put to work in the A. O. A., in order that they may better understand the problems of the A.O.A. and that the officers of the A. O. A. may better understand their problems.

I stand for higher qualifications for a specialist, so that when a physician is so designated we truly have a specialist and not merely a designation. I stand for fewer and better specialists. What the public welfare requires is a real osteopathic physician—one who rarely has need to call in a specialist.

5. I pledge myself to work for the improvement of our professional schools. I realize that the development of osteopathic education is probably without parallel in the history of professional, academic growth. Our institutions have grown because of the momentum of the profession and of the ideas they represent. To protect this essential development and to keep pace with the ever-changing demands of educational qualifications, we must provide for, and insist on, the following program:

(a) High standards. Our schools must maintain the present required standard of the A. O. A., striving, at the same time, to improve the teaching staff and to decrease the teaching load of the instructor, until they are within the accepted practice of all universities. It is a problem to teach others the fundamentals of osteopathy, and the fundamental concepts of the etiology of disease, the lesion, its visualization, its diagnosis and correction. We must insist that the teachers emphasize this all-important part of osteopathy much more than has been done in the past few years. The osteopathic physician is what the college makes him. Our colleges and the profession will be about what we make them.

(b) Improved organization. I congratulate some of our schools for the improvements they have made in their advisory and administrative branches. I feel that the profession should insist that all of them reorganize their boards of trustees to include lay members as well as doctors and that they place educators at the head of their administration. Further, I feel that they should be impelled to seek membership in, and recognition by, the Association of American Universities.

(c) Better facilities for postgraduate work. Opportunity must be offered to keep the man in practice abreast of the times. We must meet the need for intensive graduate study.

(d) The development of a research program. It has been estimated that we have ten years in which to get a research program established, if it is to be of service. Osteopathy is a philosophy, an art, and a science. Scientific data in the field must be correlated and preserved for posterity. This can best be done through the colleges. Even as osteopathy began in research and experimentation, it must continue so, if it is to further the progress to which it is dedicated.

(e) Endowment. Seldom has the public been asked to assist our schools, and never in an organized fashion. With so little subsidizing, the profession can be proud of what it has achieved. If we set our goal high and reorganize the standards in our teaching institutions and develop our research to prove our concept, we can realize our ultimate objective. Then will the public be not only ready but also anxious to participate. There are legions of friends of osteopathy, men who owe their lives and the lives of their loved ones to osteopathy. These people are eager to help. The time has now arrived when we should provide the means by which they can express their gratitude.

(f) Student selectivity. The profession has the responsibility of seeing that the superior, scientific-minded students in high school and college are acquainted with the nature of our profession and its requirements. If we expect to pick students carefully, to select only the superior, we need a large group to choose from. The average premedical student has his mind already made up, his school decided upon. If he is really superior, he will get into the school of his choice and he is not likely to change his mind during the years in a premedical school, which is directing him all the while to an allopathic college. If our selective method is to function, we must interest young students in the secondary schools. Our method of recruiting is outmoded; we need a new method to function under the new, more rigorous standards which we have endorsed to meet the demands of our highly specialized society.

Having suggested the policies and purposes of the Association, as I see them, I now wish to come to grips with the Association itself, with the machinery through which we expect to achieve our aims.

1. I propose first that the administrative group and the policy group of the organization be divorced. I recognize the position of each, but I feel that they should be distinct; in separating them, we will secure better workers among the membership and accomplish a more vigorous program.

2. I favor giving more duties to the president-elect and to the vice-president. These men should be given specific responsibilities. They should be able to take over some of the speaking engagements and public relations work in connection with the divisional societies. We are expecting too much of the president, who serves without compensation at a great sacrifice. After all, he must make a living, as you and I have to do. I favor the creation of the office of speaker for the House of Delegates, either by election or by the use of the first vice-president of the Association. It is utter folly to use the president in this capacity when he has been over all the reports and served as Chairman of the Board of Trustees. He could use his time to better advantage to the profession.

(Continued on p. 514)

Eyes and Vertebral Lesions

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Not many people, given a choice of evils, would select blindness. Prizing vision as a dearest possession, we treat the eyes as if they were stepchildren in a fairy tale. They may resent ill treatment occasionally, but on the whole they endure hardship like good soldiers and give remarkably good service for a lifetime. There are only a few things which lead to actual rebellion; the eyes must have good blood flowing normally, and they must have adequate nervous relations with the rest of the body.

These requirements are not often mentioned in articles dealing wiith the hygiene of the eyes, yet they are far more important than anything else.

In a consideration of the effects of vertebral lesions, certain axiomatic principles must be kept in mind. In the first place, the body is a unit, working together in all its parts, for the good of the whole. In the second place, the unit of which the body is composed is in the cell, and not the organ or the tissue. In other words, the body is not a democracy, it is a republic, which is by far the finest type of human organization.

From a medical viewpoint, the body is composed of organs, any one of which may function abnormally and originate disease. Treatment is devoted to compelling the offending organ to behave properly, usually by some method beyond the normal needs of the body.

From the osteopathic viewpoint, the body is composed of cells, every one of which functions normally so long as no adverse influence affects it. Treatment is devoted to removal of those adverse influences.

These considerations are axiomatic.

Diverse cells, which still are essentially alike, are unified in function, in part through the blood and the lymph. These fluids, which act as grocer and garbage collector at the same time, provide the food materials, the internal secretions, the oxygen, necessary for all living cells. It is essentially the function of the nerve centers to act as unifying agents. The nervous system does not control; it merely coordinates and transmits qualities from one place to another, so that the organism as a whole reacts to the conditions affecting the whole organism.

Eyes especially are intimately related to the whole, by means of the nervous system. The retinae and the optic tracts (optic nerves) really should be considered a part of the brain itself. These structures are subject to the same vasomotor reactions as those which affect the rest of the brain and its meninges. Examination of the circulation through the retina gives information concerning the circulation through the brain itself.

The eye is composed of living cells and nonliving substances which are maintained and controlled by the living cells. The cornea, the lens, the various humors retain their normal structure and relations only so long as the living cells remain normal in function.

Like all living cells in the body, the cells of the eye depend upon a constant flow of normal blood, and a constant flow of normal nerve impulses, to maintain their functional activity and their structural integrity. Nothing more do they need.

The normal blood, and the lymph derived from normal blood, must carry nutritive materials, various internal secretions, oxygen and other necessities for normal cell life. Vitamins are needed, as they are for all living cells. Vitamin A seems essential for the regeneration of visual purple. Its absence causes night blindness.

Normal blood does not contain such poisons as are associated with nephritis, diabetes and other diseases, nor with poisonous drugs or others of extrinsic origin. Normal circulation of normal blood, and normal innervation, are essential to normal functional activity of all living cells, including those of the eyes. This must be repeated and emphasized.

Recent studies of the chemical relations of nerve impulses have explained certain puzzles which have been found in the study of the effects of vertebral lesions. Briefly, it may be said that the functional activity of nerve endings of the motor, sensory, and parasympathetic nerves, and the passage of nerve impulses through synapses in the sympathetic and the parasympathetic ganglia, are associated with the rapid development of acetylcholine, and with its equally rapid destruction by cholinesterase which is present in normal blood and in the tissue fluid and the lymph derived from human blood. (Experimentally, cholinesterase is inhibited or destroyed by a drug, eserine, whose presence permits the acetylcholine to continue activity, thus to prolong the nerve stimulation.) Quantitative relations of cholinesterase and acetylcholine have not been determined. Judging from conditions known to affect other physiological conditions, it may be supposed that under abnormal conditions an inadequate supply of cholinesterase might account for certain spasmodic or prolonged contractions of certain visceral muscles, including those of the lens and the iris.

The sympathetic nerve endings, on the other hand, are associated in their functional activity with sympathin, a substance resembling adrenin in its physiological activity. Sympathin is associated with a slower nervous activity. Sympathin is not immediately destroyed, but is carried away in the blood stream. (Experimentally, tissues whose sympathetic nerves have been cut react to the presence of sympathin in the blood stream.) While no experimental evidence is at hand, it may be supposed that the normal circulation of sympathin depends upon the normal circulation of the blood.

These chemical findings have not been fully studied, yet it is known that they are present, and that they perform important physiological func-

tions. A recognition of those facts already known throws some light upon the manner in which vertebral and other lesions affect the eyes as well as other viscera.

The nervous relations of the eyes are complicated. Many different nerve centers are concerned, and hence several different vertebral lesions may become pathogenetic.

The retina and the optic tracts have been mentioned. They are not, apparently, directly affected by vertebral lesions, but their nutrition depends upon normal blood flow, and this is subject to the vasoconstrictor activities of the nerve centers in the upper thoracic spinal cord. The nerve cells in these centers, which are located in the lateral horns from the seventh cervical to the fifth thoracic segments, send axons to the lateral sympathetic chain. Most of them finally terminate in the superior cervical ganglia. Gray fibers, the axons of these sympathetic cells, are carried with the carotid arteries and their vessels of distribution to the arterioles. This innervation is ipsilateral, that is, the left sympathetic chain affects the blood vessels of the left brain and the left eye, and the right sympathetic chain affects the vessels of the right brain and the right eye.

Vasodilator nerve impulses are carried by gray fibers from the geniculate ganglion, which is the parasympathetic ganglion associated with the seventh cranial nerve. White fibers enter this ganglion from the lateral part of the nucleus of the seventh cranial nerve. The circulation through the geniculate ganglion is subject to vasoconstrictor control from the superior cervical ganglion, hence from the upper thoracic centers of the spinal cord.

The fifth cranial nerve carries nerve impulses to the cornea and adjacent tissues. These are important in the nutrition of the eye. Corneal ulcers frequently occur in persons with paralysis of the fifth cranial nerve. That the presence of acetylcholine is concerned in this nutritional control seems to be indicated by the fact that extremely minute instillations of acetylcholine, itself a poison, seem to exert a beneficial effect upon paralytic ulcers. Normally, the activity of the fifth cranial nerve supplies this substance to the surface of the cornea and the aqueous humor. Normally, also, the blood stream carries cholinesterase, which destroys the acetylcholine as soon as it has served its purpose in the transmission of any given nerve impulse.

The fifth and the seventh cranial nerves may be affected by lesions of the occiput. The edema associated with an occipital lesion may exert sufficient pressure upon the connective tissues around the base of the skull to affect these nerves and their ganglia. Edema so produced is known to extend through the tissues at the base of the skull in certain laboratory animals, and it may be inferred, by clinical evidence, to have the same effect in humans.

The muscles of the iris include two sets of fibers; the circular fibers which constrict the pupil have parasympathetic innervation, while the radiating fibers, which dilate the pupil, have sympathetic nerves. The muscles which flatten the lens have the same innervation.

The pupils are dilated and the lens is flattened by impulses carried by gray fibers from the superior cervical ganglion. The white nerve fibers reaching this ganglion arise from nerve cells in the lateral horns of the spinal cord from the first to the third thoracic segments, and associated spinal centers. In this ganglion the transmission of nerve impulses from the ciliospinal center in the upper thoracic spinal cord is associated with the formation of acetylcholine, which is destroyed immediately thereafter by cholinesterase of the blood and tissue fluids. If the cholinesterase should be absent in the circulating blood the persistent acetylcholine continues, or permits to continue, the stream of nerve impulses. It is known that vertebral lesions which affect the circulation through the superior cervical ganglion, such as the upper thoracic or the upper cervical, are associated with recurrent or persistent contraction of the muscle which flattens the lens, and thus causes persistent eyestrain not controlled by glasses. Of course, glasses cannot be fitted properly so long as the lesion persists. A persistent or recurrent contraction of the pupillodilator muscles, which permits an excess of light to reach the retina usually is present in these cases, and this adds to the muscular strain.

The axons of the cells of the superior cervical sympathetic ganglion have many destinations. Those which are destined for the iris and the lens accompany the fifth cranial nerve to the eye. The activity of these sympathetic fibers is accompanied by the formation of sympathin, a substance somewhat resembling adrenin. Sympathin is associated with slower nerve activity; it is not destroyed but is carried away by the blood stream. The dilation of the pupil and the flattening of the lens are slow reactions whereby the eye is protected in some degree against too rapid increase in light and too rapid change in accommodation.

The constriction of the pupil is effected by the nerve fibers of the visceromotor nucleus of the third cranial nerve. Its medullated fibers terminate in the ciliary ganglion, wherein acetylcholine is associated with nerve activity. Here, also, the passage of the nerve impulse is associated with sudden development and equally sudden destruction of the acetylcholine by cholinesterase. Here, also, the normal activity may be prolonged if acetylcholine fails to be destroyed; or if the supply of cholinesterase should be inadequate or absent. Prolonged activity of acetylcholine causes repeated or continued nerve stimulation within the ciliary ganglion, and thus spasmodic or prolonged constriction of the pupils.

From the ciliary ganglion gray nerve fibers pass to the circular fibers of the iris, which constrict the pupil. In this location, as in all parasympathetic nerve endings, acetylcholine is produced and this is destroyed, as soon as it has performed its rather mysterious function, by cholinesterase of the blood and related fluids. Acetylcholine is associated with rapid nervous activity, and the pupil contracts very rapidly, thus protecting the retina against sudden increase of light.

The rapid action of the constrictor fibers and the slow action of the dilator fibers both are protective.

In the absence of cholinesterase, and presumably in the absence of normal circulation, sympathin and acetylcholine, either or both, may be permitted to remain for too long a time at the site of the nerve endings. Prolonged or spasmodic contraction of the muscles of the iris or the lens may be caused, with resultant eyestrain. Even the most efficient oculist without osteopathic understanding could not fit satisfactory glasses under these circumstances.

From all these anatomical considerations the vertebral lesions which are most apt to affect the eyes may be located in the upper cervical and the upper thoracic spinal column. Occipital lesions cause edema of the adjacent tissues, and these extend to and around the fifth and the seventh cranial nerve roots and ganglia. Lesions of the atlas, axis, and third cervical vertebrae, in combination or alone, cause edema which extends around the superior cervical ganglion of the sympathetic, and its branches to the carotid plexus. Lesions of the first to the third thoracic vertebrae cause edema which extends to and around the ganglion stellatum and the second and third thoracic sympathetic ganglia and their branches.

Lesions of the fourth to the seventh thoracic vertebrae cause edema which extends to and around the corresponding sympathetic ganglia, but inasmuch as this part of the sympathetic chain carries chiefly medullated fibers destined for more cephalad synapses, such lesions are less apt to affect the eyes and the brain.

Lesions of the fourth thoracic and lower vertebrae may affect the eyes indirectly; for example, a lesion at about the tenth thoracic may affect the pancreas, and disturb sugar metabolism. Diabetes so produced may cause cataract. A lesion of the eleventh or twelfth thoracic affects the kidneys; nephritis so produced causes certain retinal disturbances. Lesions which disturb any viscus might affect the eyes, indirectly, through malnutrition, toxemia, or disturbances in the internal secretions.

But far more common as causes of disorders of the eyes are the lesions of the occiput, atlas, axis and third cervical vertebrae, and the first, second and third thoracic vertebrae. Lesions of the associated ribs may be important in the results of lesions of the upper thoracic vertebrae.

Clinic records from The Pacific College of Osteopathy and from the A. T. Still Research Institute, as well as reports from many osteopathic physicians illustrate the importance of the lesions mentioned. Occasionally other lesions have been reported in this connection and no doubt many such could be cited. There are a few factors in methods of treatment which should be emphasized.

Patients differ in their reactions to treatment. With some, it is better to employ extremely slow manipulations, persuading the tissues into normal relations. With other patients, and with nearly all animals, the quick, brisk manipulations are better, and the more quickly the corrections are made, the better. This does not mean rough manipulations and in all cases gentle methods are indicated. But brisk and speedy manipulations, in one group of cases, and prolonged and softer handling in another group, may give the best results.

In dealing with the eyes, especially, the manipulations should be limited to the effects desired. In two different cases of cataract, in which a lesion of the second thoracic vertebra was considered of etiological importance, the correction of this lesion alone exerted a most beneficial influence upon the eyes. But when the osteopathic physician added treatment for lower thoracic lesions, in one case, and for upper lumbar, in the other, the eyes remained unaffected. From such case histories, and from some experiments at Sunny Slope, it may be concluded that treatment devoted to the eyes should be given alone. Other treatments needed should be given on another day.

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IMPAIRED JUDGMENT FROM SULFANILAMIDE

Many therapeutically effective drugs influence the physiologic mechanisms, psychomotor reactions or judgment of persons who take them. When given to patients at rest in bed such drugs have been established as beneficial to the patient and of course harmless to other persons. Under some circumstances, however, drugs may have effects potentially dangerous to both patient and community. Not long ago a locomotive engineer who was taking sulfanilamide for an infection of the bladder was involved in an accident in which considerable property damage was done and a number of people were injured. He described the event as follows:

"Approaching the station where the accident occurred, a feeling of lassitude seems to have crept over me unawares and to the extent that I do not have much recollection of what went on for the last two or three miles. I was sitting on my seat, looking out and feeling that I was on the alert . . . Actually I was not on the job with all my faculties. I passed landmarks customarily used to locate position without seeing them, even to the station board; and it was only when the hazard became imminent that I was aroused out of it and became efficient."

Already physicians have ruled that airplane pilots must not fly until four days have elapsed after they have received any of the sulfonamide group. Patients engaged in mechanical work of any kind should not take sulfanilamide except when relieved from their responsibilities. Physicians thus have a definite obligation when prescribing sulfanilamide. Patients should be cautioned preferably to stay at home and at rest while taking the drug and not to drive an automobile, make any important decision or sign any papers while the drug is being administered. Such recommendations seem especially advisable in view of the insidiously developing reactions of sulfanilamide when compared with such drugs as the bromides and the barbiturates.— *Journal A.M.A.*, May 17, 1941, p. 2279.

Tuberculosis of the Spine*

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Tuberculosis of the spine was described by Percival Potts of London, in 1779, in his paper, "Remarks on that kind of Palsy of the Lower Limbs which is frequently found to accompany Curvature of the Spine." This disease has since been known as Pott's disease.

The spine is the most frequent location of bone tuberculosis. In the greatest number of cases of spinal tuberculosis the disease occurs in the thoracic region and at the thoracolumbar junction; next in frequency is the lumbar region with the cervical region last. Clinical figures show distribution to be 60 per cent thoracic, 28 per cent lumbar, and 12 per cent cervical. Fifty per cent of all cases occur between the ages of 3 and 5, twenty per cent between 1 and 2, and 18 per cent between 6 and 10. There is no great difference in distribution among sexes, male 53 per cent and female 47 per cent.

The pathology of tuberculosis of the spine is essentially the same as tuberculosis of the other joints, but clinical manifestations are altered greatly by the mechanics of the spinal column. To understand the pathology it is necessary to review the physiological curves of the spine, which are: anterior cervical, posterior thoracic, and anterior lumbar. Since tuberculosis of the spine affects the anterior part of the vertebral bodies, the physiological curves determine where weight will fall upon the diseased bone and where the greatest amount of damage will be caused. The characteristic deformity of tuberculosis of the vertebral bodies is anteroposterior kyphosis or gibbus formation, due to the forward collapse of one or more vertebral bodies. This deformity is greatest in the thoracic part of the spine where the diseased vertebral bodies fall in the concavity of the normal curve. In the lumber and cervical regions of the spine where the diseased bodies are on the convexity of the normal curve, the deformity is often incomplete. The disease may be limited to the anterior portions of the vertebral bodies, but generally involves the bodies in their entirety. The intervertebral discs at first offer some resistance to the spread of the disease; later they, themselves, become absorbed. The laminae, transverse, and spinous processes are rarely involved. As the deformity increases in the thoracic region, the upper portion of the torso falls forward, causing subsequent changes to occur. The body height is decreased, the ribs and sternum are pushed forward, giving the patient a hunch-backed appearance. Chest and abdominal organs are greatly compressed and illness is the general rule. Ribs lose their symmetrical parallel appearance and radiate from the center of the destruction. Repair takes place by ankylosis of the diseased vertebral bodies and fusion of the laminae which occurs late. Occasionally the vertebral articulations, transverse and spinous processes also ankylosis. It is well to remember that repair is often not adequate, and if the aftercare is not carefully planned, angulation will be increased by the weight of the head and chest falling upon the diseased vertebrae. Many times repair appears to be adequate, but it is wise to support the new bone until it has become sufficiently strong, which, in many cases, takes from five to ten years.

Symptoms.—The closest attention should be given to early, systemic manifestations, namely: loss of weight and appetite, feeling of tiredness, listlessness, and occasionally afternoon temperature. Due to the location of the infection, swelling and muscular atrophy are not evident. Muscular spasm results in limitation of motion and a knowledge of spinal movements is necessary to recognize this limitation. The chief movements of the lumbar spine are lateral bending and extension, dorsal movements are chiefly flexion and rotation. The cervical spine moves in all directions. When examining for motion of the spine, we must remember that nature produces a protective mechanism evidenced by spasm of muscles above and below the diseased region, and not just at the site of infection. Pain is usually very severe, due to the close proximity of the spinal nerves to the site of infection. However, it is not usually an early symptom. In the cervical region, pain will be either deep muscular or suboccipital in character and may be referred to the arm. In the thoracic region, pain is referred to the sternum, or appears as intercostal neuralgia. If the disease is located at the thoracolumbar junction the pain is referred to the epigastrium, or appears as girdle pain, while in tuberculosis of the lumbar region, the pain is referred to the pelvis and legs. Almost any movement of the spine will cause pain. Pain is often brought on by coughing, sneezing, or jarring of the spine.

Body height is decreased late in the disease, after deformity has occurred, and is due to the collapse of the vertebral bodies.

The gait is characteristic. The patient will walk with short steps and treads softly on toes, feeling his way along with the hands and using every opportunity to support himself on nearby objects. When picking up objects from the floor, the patient will bend from the knees, holding the spine rigid, and, in straightening, will climb up with the hands on thighs.

In tuberculosis of the cervical vertebrae the patient will often sit with elbows on the table, his hands supporting his head. In disease of the thoracic region, he will back up against anything solid for support when standing. In disease of the lower thoracic and lumbar regions, hands will be placed on thighs for support when standing, even for short periods. In walking, the body is thrown backwards, to take the weight off the diseased spine. Deformity occurs mostly in the thoracic, moderately in the lumbar, and least in the cervical region. The more vertebrae involved, the greater the deformity. Sharp angulation denotes acute disease, while a well-rounded deformity indicates that the disease is chronic. Deformity changes the physiological curve of the diseased region and compensatory curves occur elsewhere in the spine in order that body balance may be maintained. These compensatory curves cause changes to occur in muscular and ligamentous structures and consequently many reflex symptoms will develop.

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Abscesses are frequently found in cases where extreme destruction has taken place. The most frequent are deep cervical retropharyngeal abscesses in the cervical region, prevertebral and mediastinal abscesses in the thoracic region, and iliac and psoas abscesses in the lumbar region. Spontaneous rupture of abscesses is always a possibility. Retropharyngeal rupture into the throat may cause suffocation.

Leucocytosis is not always present and temperature often does not exceed that of accompanying disease due to minor infections.

Paralysis most often occurs in disease of the thoracic part of the spine, due to the fact that the spinal canal is the smallest at this point. It is generally due to intraspinal abscess and seldom to bony pressure. Paralysis is usually of the spastic paralytic type; the patient's first symptom is tiredness, the legs feel heavy and insecure in walking and certain stiffness and rigidity develop. The patient avoids any forced movements. If pressure on the cord increases, often degeneration of the cord occurs and the paralysis changes from the spastic to the flaccid type. Occasionally, in adults, this change comes on rapidly—in which case, surgical intervention becomes an immediate necessity. Likewise, in case of spinal block, surgery is imperative. A simple test for spinal block is to make a spinal puncture, attach a glass tube to the needle and note the height of the fluid in the tube, then compress the jugular vein. If the fluid rises in the tube, spinal block is not present, but failure of fluid to rise denotes absolute block.

Diagnosis.—Diagnosis should be made before deformity occurs. Deformity indicates that considerable destruction has taken place and the diagnosis is self-evident. In making an early diagnosis, special emphasis should be placed upon the history. Loss of weight and appetite, listlessness, retarded growth, and afternoon temperature are all points of value. Likewise, any break in the normal curves of the flexed spine, when viewed from the side, is a point valuable to diagnosis. The Pirquet test is of value in children under 12 years of age. One should not rely upon one negative reaction, but another test should be made in ten days to be certain tuberculosis is not present.

X-ray pictures are by far the most valuable diagnostic aids available to the physician. Narrowing of the intervertebral space is the earliest and most positive sign of tuberculous infection. This is the only disease that thus manifests itself with possible exception of typhoid infection of the spine. Anteroposterior plates will not show the greatest destruction during the early stages of the disease. However, after the intervertebral discs have disappeared, the vertebrae appear as one mass with increased shadow density. This shadow will be present well into convalescense and shrinking of the shadow gives favorable prognosis. Lateral plates are diagnostic throughout the entire disease. These plates show early, the beginning destruction of the anterior portions of the vertebral bodies, and best show the progressive destruction thereafter. When lateral plates show an even, fairly dense, shadow, with no cavities, the prognosis is favorable. Uneven shadow, with cavity formation, shows repair to be only partially completed. When making an anteroposterior view of the upper cervical region, one must be sure to focus the tube through the open mouth in order that shadow of the lower jaw on the upper cervical vertebrae will be eliminated. One can rely upon x-ray evidence, positive Pirquet reaction, and muscular rigidity of the spine denoting tuberculous infection.

Certain disease must be eliminated in making a diagnosis. Space will not permit elaborate detail, but merely the diagnostic points of prime importance:

(1) Injuries to the spine—history of injury, x-ray evidence and negative Pirquet reaction.

(2) Chronic arthritic deformity—a polyarticular affection, x-ray evidence.

(3) Torticollis—in congenital wryneck, movement is not painful; in traumatic injuries and glandular inflammations, movement and pain are restricted usually in only one direction; tuberculosis is painful on all movements; negative Pirquet reaction and no x-ray evidence.

(4) Typhoid spine—comes only after typhoid infection, positive Widal test.

(5) Malignant disease—is more painful than tuberculosis and cord symptoms are more marked; x-ray picture shows more activity around diseased region.

(6) Hip disease—x-ray evidence.

(7) Scoliosis—the curve is gradual and rigidity affects only the curved portion of the spine; x-ray picture will show no focal destruction.

(8) Ruptured spinal ligaments—history of severe injury; kyphosis present on standing, disappears upon lying down, and recurs upon standing.

(9) Fracture of the spine—principally history of injury, careful study of x-ray pictures (probably best to use stereoscopic plates).

Prognosis—Tuberculosis of the spine gives the poorest prognosis as to life of all tuberculosis bone diseases. Twenty percent of the patients die within a few years of onset. Disease of the cervical region offers the best, and disease of the thoracic region the poorest, prognosis. Prognosis is favorable in children when they are placed under treatment before marked destruction occurs. Adults, due to economic conditions, present a poor prognosis and those who do recover often develop pulmonary tuberculosis later.

Treatment.—In treatment of tuberculosis of the spine, general care is of the utmost importance. The patient should be given as much food as he can digest comfortably and it should be given at regular intervals while the patient is confined to his bed; starches are restricted and meat is given only in small quantities. Milk, eggs, cereals, cream, fruit, and vegetables are given in abundance. Olive-oil and cod-liver oil are beneficial in all cases. Proper eliminations should be maintained. It is better to give the patient plenty of fluids and fruit juices during the day and mineral oil at bedtime, if necessary, than to administer drastic cathartics.

The patient should have a well-ventilated room in which there is plenty of sunshine. Ultraviolet light therapy should be used daily, throughout the course of the disease and convalescence. One may begin with three minutes exposure and increase the time one-half minute a day until thirty minutes exposure is reached, then begin over again at three minutes with the lamp nearer the patient and increase as before. Educational and occupational treatment should be given in all cases, regardless of age. Children should continue their school work, through bedside teaching. In this way, the long hours will pass swiftly. In adult cases, occu-

pational therapy gives the patient a feeling of usefulness and often brings out and develops hidden talents.

While general treatment is important to the patient, local treatment is by far the most important in assuring complete recovery. In local treatment the three absolute requirements are: remove superincumbent weight, fixation and hyperextension of the spine in order that the deformity may be minimized and possibly prevented. While these cases can be treated either by recumbency or ambulatory methods, the former is by far the best and assures the physician the best results. Ambulatory treatment is carried out by cast or brace. These cannot be fitted closely enough to remove the superincumbent weight from the diseased region, correct kyphosis and limit motion of the spine without producing pressure necrosis of the tissues over the kyphosis and possibly at other supporting points. Casts also aggravate pulmonary conditions and interfere with respiration. Let us not, therefore, fool ourselves that by treating cases in this manner, we can expect the best results. There are many cases in adults who, for financial reasons, are unable to be recumbent from two to three years and, therefore, must be treated by ambulatory methods. Prognosis in these cases is always poor. Recumbent treatment is indicated in the following: in all cases with pain or distress, marked impairment of general condition, elevation of temperature and loss of appetite; in all cases with increasing deformity, rigidity and spasms of the back muscles; in all cases developing superficial abscesses; in all cases developing paralysis.

In recumbent treatment the patient should lie in a curved frame, brace, or plaster shell, designed to hold the spine in hyperextension at the site of deformity. Lateral motion as well as anteroposterior motion must be eliminated. Where recumbent treatment is used, a plaster shell should be made to fit the anterior body surface, this anterior shell to be strapped to the frame, brace, or posterior shell when turning the patient. In this manner, the patient can be turned for light therapy and bathing without changing the position of the spine. The back should be watched carefully for pressure symptoms as long as the patient is hyperextended. Vomiting and indigestion are frequent complications of recumbency and may be corrected by lessening, temporarily, the amount of hyperextension. Difficult respiration may be corrected by placing a small pillow under the head. Three forms of apparatus most commonly used are: the Bradford frame, plaster shell, and double Thomas frame. There are also numerous modifications of each type. All physicians are familar with the Bradford frame, so space will not be taken for its description.

Plaster Shell.—The construction of a plaster shell is described by Jones and Lovett as follows:

A hammock of cotton cloth not as wide as the patient is stretched tightly between the two ends of a horizontal gas pipe frame. The patient is protected by stockinet and placed face downward upon the hammock with his arms at right angles with the body. Plaster bandages are then passed around both patient and hammock, which is to secure temporary fixation and serves as a basis of the application of further plaster. This consists in carrying plaster bandages from right to left and back, and up and down the back, until ten or fifteen thicknesses have been applied, but not going completely around except at the end, when a series of final turns is made. The complete shell should reach from the top of the head to the knees and from the anterior axillary line on one side to that on the other. It is important that it should be well rubbed while being put on, and homogeneous when it sets. The encircling bandage is cut in front and the plaster shell removed. The shell is then cut through transversely at the level of the deformity before it hardens. The two segments are then bent on each other to secure greater hyperextension, the junction between them filled by plaster-of-Paris bandages crumpled up and the whole shell strengthened by plaster ropes running up and back, or by means of an iron hinge put in on each side of the cut. A connecting rod furnished with a screw and turn buckle connects the two segments, in which case any degree of hyperextension may be furnished. The shell is then padded with felt on each side of the deformity, a sheet of cotton is placed over the interior and the whole shell is covered with stockinet.

Since patients in such shells must be turned often enough for the care of the back, it is absolutely essential that a lid or anterior shell be provided with the same curve as the posterior shell, so that hyperextension of the spine will never be disturbed. Such a lid is laid over the child, filling in the opening in the shell—the two are strapped together, the child left still hyperextended, while the back is bathed. The process is repeated for turning the child back.

Double Thomas Frame.—Jones and Lovett describe the construction of a double Thomas frame and the application of the splint as follows:

A Thomas double frame consists of two perfectly straight bars of iron (3/4 x 3/16 gauge for 20-inch frames up to 1 x 1/4 gauge for 40-inch frames) which are made of such a length as to extend from the scapulae to 4 inches above the heels.

Both of these straight bars incline outward at their lower ends at an angle of 5 degrees up to 10 degrees. These stems are connected above the ankles by a cross rod (1/16 up to 3/8 round also at the top by a metal band (3/4 x 1/8 up to 1 x 1/8) which completely encircles the chest and is open in the front. A similar band, (5/8 x 1/16 up to 3/4 x 1/8), connects the stems just above the buttocks and extends as wings just long enough to grip the pelvis. A short iron grip is fixed to the end of each stem into which the ankles will be placed. To prevent any tendency to knock-knee, it is an advantage to add a bar between the two lower wings of the frame and at right angles to them; to this the knees can be bandaged. A firmly padded cushion (2 inches to 4 inches thick the width of the trunk should reach from above the upper border of the frame and extend down each leg. A horse shoe shaped piece is removed at the buttocks and extra thickening placed under the knees. This cushion is secured to the frame with tapes.

The patient is placed on the splint with the buttocks on either side of the horseshoe shaped gap in the back pad, which has been left for nursing purposes. The wings of the splint should then be moulded round the patient's chest and ribs, care being taken to turn them up acutely enough from the back pad to prevent side movements of the body. A 5 inch thick pad is placed under each knee to prevent genu recurvatum, and the ankle grips, which reach just above the malleoli, must be well padded. The knees are now bandaged firmly to the splint, and the head should rest snugly in the head piece.

. . . When heliotherapy is desired, a plaster lid is used to supplement the double Thomas frame. Whenever the patient has to be turned, the lid is applied so that there is no interference with the rigidity of the spine and the patient can lie in the lid so that the spine may be exposed to the sun.

The patient should never be turned on the side for nursing purposes, or the spine and limbs will sag laterally. A block should be placed underneath the bar between the ankles to avoid pressure on the heels, increasing the height of the block when necessary to insert a flat bed pan beneath the splint. In this raised position all necessary washing of the buttocks can be done. The patient is never taken from the splint, nor are the bandages removed for any purpose, but only the exposed skin washed. The feet should be

supported at right angles, and protected from the weight of the bedclothes.

There can be no form of traumatum more harmful than allowing a patient to twist his tuberculous spine, or twisting it by careless turning. It is frequently followed by grave symptoms.

A most excellent apparatus invented by Mr. Pugh . . . is a form of carriage which allows very easy nursing and is so constructed that exercise can be given to the knee joints without disturbing the spine. The patient can remain in this carriage night and day.

In summing up rational treatment, it is well to repeat that removal of superincumbent weight and fixation can be accomplished successfully only by recumbency over a period of 18 months to 3 years.

Ambulatory Treatment.—Plaster jackets, while not as effective as the previously described treatment, on the other hand, have secured very remarkable results when properly applied. Some of their disadvantages are: they are difficult to keep clean, are very hot, leave a very limited surface for bathing and light therapy, restrict respiration and aggravate pulmonary infections. Jackets must be changed every six months, at which time a certain amount of traumatism to the spine is bound to occur. When the jacket is removed, the skin will appear to be very hard and scaly. It is not wise to try to soften the skin, but merely apply the new cast with the minimum of cleansing. Should the patient experience increased pain, paralysis, abscess formation, develop eruptive fever, or should the deformity increase, it becomes imperative to remove the cast and place the patient in recumbency.

Jones and Lovett describe the application of a plaster jacket according to Colot (L'orthopedie Indispensable, Paris, 1909, 7) as follows:

The patient is suspended by the head by a cotton sling, which may be incorporated in the jacket if a head piece is to be used. In this technique, a pattern is cut for the front of the jacket and one for the back, of crinoline gauze of several thicknesses. These are impregnated with plaster cream which is rubbed in, and when the patient is suspended, the front piece is applied followed by the application of the back piece, and a few turns of bandage secure the two and hold them together. A collar is cut, if necessary by a separate pattern, from crinoline and impregnated with plaster in the same way. The technique of application in this way is somewhat difficult, and there is nothing that cannot be done equally well although less quickly by the ordinary plaster roller bandage. Particular attention is paid to the fit over the pelvis, all jackets go over the shoulders, and a head piece is applied for all disease above the mid-dorsal region.

When the jacket is dry, the front is cut out by removing a section from the top of the sternum to the symphysis pubis. A trap door is then cut out over the kyphos under which is placed a mass of compressed absorbent wool. The trap door is then returned to place and fastened down by plaster or strapping and the compression is increased from time to time by adding more absorbent wool. The technique is not easy to follow without considerable practice.

A jacket of high efficiency may be applied during recumbency by the following method. The patient lies on the face on a gas pipe frame, the ends of which are connected by two webbing straps or a strip of cloth and a windlass is fastened to one end of the frame so that they may be tightened or loosened. An undervest is applied to the patient before laying him on these webbing straps, and two heavy pads of felt, at least an inch thick, are applied at the site of the kyphos running two inches above and below, the jacket is then applied as high as the middle of the kyphos and carefully moulded in over the pelvis as described above. It is allowed to set and the webbing straps are then loosened. As a result of this the spine is hyperextended against the posterior edge of the upper part of the jacket so far applied. The straps are loosened until the patient complains of slight discomfort, when further loosening is stopped and the rest of the jacket applied. This gives a jacket applied as high as the top of the axillae and the patient turned on the back with head and shoulders projecting over the end of the table. Shoulder pieces are easily added with a collar if desired. The advantage of this method over the technique described by Calot is that the spine starts in a hyperextended position, after which the front of the jacket may be removed, the trap door cut, and pressure applied if it is required.

Braces are least effective in treating acute cases and most affective in convalescence. A brace should be worn from two to five years after recovery in order that increase in posture deformity may be prevented. There are so many braces on the market that description of all would be impossible. Those made by Taylor and Thomas are probably the best known. During convalescence, a brace should be worn and the patient checked every three months. Besides checking the general condition, a spinal pattern should be made for record. Patient lies face downward and a strip of lead is moulded to the spine. A piece of cardboard is then cut to conform to the lead strip. When patient next returns, apply the cardboard pattern to the spine to determine whether there has been an increase in the deformity. In the event that the deformity has increased, a new pattern should be made. These patterns are very useful if at any time the patient questions the progress of treatment, or if for any reason the case becomes a medicolegal one.

Change in spinal deformity does not necessarily mean a relapse, for many times is due to the soft bone yielding and moulding itself to mechanical pressure. Especially is this true if the convalescent brace fails to fit properly, or is removed too soon.

Abscesses generally absorb without surgical treatment. However, when important structures become involved, or septic symptoms occur, surgical intervention becomes a necessity. Surgical technique for abscess drainage may be found in any standard orthopedic surgery text. Flaccid paralysis is treated by unilateral laminectomy.

Operative treatment of tuberculosis of the spine is indicated in children only when effective mechanical treatment cannot be carried out. In adults it offers the best chance for permanent and rapid cure. It is most successful in the lumbar and lumbo thoracic regions and least favorable in disease of the upper thoracic vertebrae. Plaster shells should be made before operation so that complete immobilization can be maintained for at least three months in adults and six months in children, after operation is completed. The patient is then allowed to sit up in a body cast for 6 months, at the end of which time, he becomes ambulatory if x-ray examination shows the disease to be arrested. Braces are then to be worn from 1 to 2 years after which all retentive apparatus may be discarded. The most successful operative techniques are those of Albee and Hibbs. Many orthopedic surgeons have modified these two techniques, which may be found in most good orthopedic surgery texts.

1818-19 Carew Tower

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Osteopathic Principles Supporting Manipulative Treatment in Nephritis*

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ETIOLOGY

The onset of nephritis often is insidious, and no etiological factor is recognizable. Usually, however, acute nephritis follows acute infections in a definite sequence; the most frequent cause being the hemolytic streptococcal group of organisms. Longcope[1] reported the presence of hemolytic streptococcal infection in 85 per cent of the patients with acute nephritis studied by him. In the series of Seegal, Lyttle, E. N. Loeb and Jost,[2] the incidence was consistently just as high. The curve of incidence of acute nephritis due to streptococcal infection in the Presbyterian and Babies Hospitals in New York parallels closely the percentage given. It is not necessary for streptococcal infection to enter the body through the respiratory tract to have an associated acute nephritis; however, diseases of the upper respiratory tract, such as tonsillitis, sinusitis, and coryza, are usually associated with streptococcal infection when it is followed by nephritis.[3]

How the kidney lesion is produced is still uncertain. The usual latent period between the subsidence of the acute infectious process and the onset of Bright's disease, along with certain experimental studies, suggest a sensitization, a so-called anaphylactic or allergic relationship.

Osteopathic vertebral lesions of the lower thoracic and lumbar regions are significant contributory factors, especially when present in combination with the aforementioned etiological factors. Barstow[4] calls attention to an almost invariable lesion of the eleventh thoracic vertebra; however, there may be vertebral lesions below or above this point, and muscular tensions of the thoracolumbar region extending upward into the mid-thoracic region. Blakeslee[5] states that in the early stages before characteristic symptoms appear, muscular rigidity at the level of the twelfth thoracic vertebra, with resultant restricted motion, may aid in the diagnosis of nephritis. McConnell[6] postulates a lordosis as an etiological factor. He believes that vasomotor disturbance plays an important role in the disease; while Loudon[7] places considerable importance on cervical lesions.

PATHOLOGY

Nephritis is an inflammatory condition affecting the glomeruli primarily, with secondary damage to other parts of the nephron as well as the interstitial tissue. The pathology of nephritis varies to such an extent that three different stages are described.

The *first* stage is characterized clinically by urinary evidence of acute inflammation, signs of acute renal insufficiency, edema, and a varying degree of hypertension. In the *second* stage there is edema and albuminuria. The *third* stage is characterized by hypertension and renal failure. Recovery is usual after the first stage, but repeated subinfections may cause the kidney to pass through all three stages if the patient survives long enough. Microscopically, the first stage is that of proliferation; the second, degeneration; and the third stage is that of atrophy and scarring.

Osler[8] states that in nephritis the kidney is enlarged, swollen, vascular, and red in color in the beginning stages. Later the organ remains large, irregular and red, especially the cortex; tubules engorged and filled with epithelium, blood corpuscles and fibrin; capsule easily detached and more opaque than normal.

Strachan[9] says that "the pathology of acute diffuse glomerulonephritis begins with a spastic contraction above the origin of the afferent glomerular arteries which prevents blood from entering the glomeruli. All subsequent phases of pathology are determined by the severity and duration of the initial ischemia of the glomerular capillaries."

The segmental origin of vasomotor influence to the kidney varies in different individuals; therefore, associated spinal abnormality may be just as varied in location. However, the most common region is from the tenth to the twelfth thoracic segments. McBeath[10] states the result of osteopathic lesion pathology in the dorsal area shows slight albuminous degeneration in the convoluted tubules in the cortical area, the renal epithelium being frayed into the lumen and the cytoplasm appears granular.

DIAGNOSIS AND CLINICAL TYPES

Osteopathic diagnosis includes, in addition to the accepted laboratory procedures, physical examination of the entire body—skeletal, somatic, visceral, nervous and glandular, its distinguishing feature being an intensive search for, and study of, the osteopathic lesion.[11]

Lesions primarily of the lower thoracic and lumbar vertebrae, especially when present in combination with any of the previously mentioned causes, aid in the diagnosis of nephritis. Attention must be paid to a most persistent lesion of the eleventh thoracic vertebra in this condition. Vertebral lesions above and below this point, may be present with accompanying muscular tensions of the thoracolumbar region extending upward into the mid-thoracic region.

Pottenger[12] says that "degeneration of the lumbar muscles and subcutaneous tissue and skin covering then becomes an important diagnostic sign in . . . chronic inflammatory processes involving the renal tissue."

OSTEOPATHIC PRINCIPLES

The immediate effect of the osteopathic lesion on the kidney and surrounding tissues, remote from the lesion, is active congestion accompanied by accelerated metabolism and increased, and often perverted, motor and secretory activity.[13] The secondary effect of the osteopathic lesion on the kidney and surrounding tissues remote from the lesion is passive congestion accompanied by retarded metabolism and de-

*Grand prize-winning essay for 1941 in contest among students in osteopathic colleges.

creased, and not infrequently perverted, motor and secretory activity.[14]

There is no uncertainty regarding the role of the osteopathic lesion in the production of nephritic disease. Congestion, inflammation and hemorrhagic infiltration in the kidney follow the induction of an artificial lesion in a laboratory animal. The appearance of albumin, blood and casts in the urine amply demonstrates the role of the lesion in the production of nephritis.[15]

The kidney receives its sympathetic connector fibers from the tenth, eleventh, and twelfth thoracic segments of the cord and sends back its afferent stimuli to the same segments. These stimuli complete the preponderating number of reflexes which originate from a given organ in the neurons arising from those segments, in such a manner that a given organ, when inflamed, expresses its reflexes regularly in the same structures.[16]

The renal visceromotor reflex, which exhibits itself in the musculature of the lower thoracic and lumbar regions, is of diagnostic value in all inflammatory processes affecting the kidney.[17] This brings to us even more the certainty that the osteopathic lesion, through its established pathology, alters the quality and quantity of impulses traveling over the nerve tissue. This perverts the vasomotor control, which with other minor factors alters kidney activity.[18]

Castlio once made the statement that a given organ or tissue will function normally or abnormally as it is adequately or inadequately supplied with the blood and nervous impulses. Still[19] said, "The rule of the artery must be absolute, universal, and unobstructed, or disease will be the result."

TREATMENT

In 1897, Still[19] wrote: "Osteopathy as a philosophy is unanswerable, and as a system of healing disease it has no equal . . . adjustment of the bones, muscles, tissues and membranes . . . allows perfect freedom of flow to the forces of the system, [and] produces the condition known as health."

The primary objectives of treatment are cutting short the course of the disease, if possible, lessening the severity of the disease in its entirety, thereby diminishing the danger of the acute condition passing into the more chronic form. The longer the acute condition persists, the greater the danger of a more permanent form resulting.

General Management—Proper general management is of great importance. Preventing the body from becoming chilled is a primary objective. Old-time physicians observed that if a person suffering from nephritis became chilled, the disease was intensified. Chilling of the surface of the body during the disease increases reflexly the spasm of the afferent blood vessels to the kidneys, thereby lessening the blood flow through them. Under such circumstances all symptoms are exaggerated. Clinicians have found that the patient suffering with nephritis responds better when he sleeps between blankets rather than sheets. The patient should not be allowed out of bed. In making his toilet, he should be careful not to expose the surface of his body to cold air. The body surfaces should be kept warm at all times, but not to the extent that there is undue sweating.

Manipulative Therapy—The normalization of derangements of spinal structure by specific manipulative procedures is the basis of osteopathic treatment in kidney disease. Any influence thus obtained in restoring glomerular activity is of infinitely greater value than the application of palliative measures while waiting for the disease to run its course. Furthermore, it can be the deciding factor in a favorable termination.[21]

As the segmental origin of vasomotor influence to the kidney varies in different individuals, the associated spinal abnormality may be just as varied in location; however, the most common region is from the tenth to the twelfth thoracic segments. The treatment of diseases of the kidney becomes a matter of the normalization of its blood supply. The osteopathic system of practice has more to offer on the basis of this understanding than any other system of therapeutics.

Osteopathic manipulative treatment is sensible, helpful, and rational, on the basis of authoritative concepts of the etiology of nephritis. In all cases of the disease, osteopathic lesions can be found consistently in the kidney region. They are largely of a reflex nature and recurrent in type but there is no doubt that many are primary. In addition, it is quite probable that in many cases susceptibility to acute nephritis is accentuated by primary osteopathic lesions in the lower part of the back causing exaggerated tonus of the blood vessels to the kidney. Both in theory and practice, osteopathic manipulative treatment tends to cut short the duration and lessen the severity of the condition. Treatment should be given three to four times daily and consists primarily of deep and careful relaxation of the contracted musculature throughout the lesioned area.

McConnell[22] states that many cases often recover from rest, quiet and warmth alone. He also advises thorough treatment to the renal splanchnics (tenth to the eleventh thoracic inclusive) for it is here that most of the lesions occur. Effective treatment may also be had by careful pressure upon the kidneys through the abdomen on either side of the umbilicus, thus lightly working each kidney outward. This brings about relaxation to the surrounding tissues, establishing normal activity of the involved organs.

Particular attention should be paid to the abnormal angle and to the lessened mobility of the lower ribs. These ribs definitely should be elevated and the quadratus lumborum stretched to aid in the maintenance of the elevation. This is highly important in order to overcome diaphragmatic atony due to the abnormal fixation and to release the tension effect to kidney stroma. Hot packs give considerable relief in muscle spasm, and also in congestion of the kidney.

The use of diuretic drugs is contraindicated in nephritis as they act as irritants to the kidney.

Diet—A fluid diet is required until the acute stage subsides. Fruit juices and milk are advised but not broths or beef tea, the latter containing waste products difficult to excrete. The use of carbohydrates and vegetables may be resumed in convalescence, but meat proteins are to be returned to guardedly. Salt is restricted, as are condiments, alcoholic liquors and excessive smoking. If there is no sign of nitrogen retention, a simple nourishing diet containing not more than fifty grams of protein a day

may be taken. Water may be used plentifully unless there is evidence of progressive edema.

CLINICAL COURSE

Most cases of acute nephritis when treated early are curable. By a cure I mean that the inflammatory process in the glomeruli disappears, the capillaries again function properly, the albumin and blood disappear from the urine, and there is no evidence that the individual has suffered from this disease.

Improvement in the course of the disease manifests itself first by an increase in the quantity of urine and the return of the blood pressure to normal. The nonprotein nitrogen of the blood drops and the edema disappears. The hematuria may still persist, but when there is no complicating focal nephritis it soon disappears. The symptom longest to remain is albuminuria.

CONCLUSIONS

During the comparatively short period of years that the relation of pathology to faulty structure has been realized, we find that clinically excellent results have been obtained in the treatment of nephritis by normalization of structure particularly in the region of the lower thoracic and upper lumbar vertebrae.

Louisa Burns once said, "In those cases in which the lesion is the most important factor in etiology, the correction of the lesion is the most important factor in therapy."[23]

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THE TEACHING OF OSTEOPATHIC PRINCIPLES AT THE KIRKSVILLE COLLEGE OF OSTEOPATHY AND SURGERY

(A Communication)

March 10, 1941

D ar Doctors:

Perhaps this item may be of interest to you, and a stimulus to other teaching groups in the osteopathic colleges. The Kirksville College of Osteopathy and Surgery has tried its best to arrange a course in principles for each semester during the entire four-year period. We have started a new course called Principles I, and believing firmly that no course can be taught without the emphasis being placed on a satisfactory text, we selected the bulletins of the A. T. Still Research Institute for this purpose. There are forty-four students in this class, and each one is required to have bulletins numbers five, six and seven. Bulletin number two was included, but will be used as a reference, and twenty-five out of the group were privileged to have the only copies of bulletin number one that are available. The class was started the first day on bulletin number six with the instruction that they were accountable for a most detailed and exhaustive study of everything in the book.

This is the second time that I have used the bulletins of the Research Institute as a textbook in courses in osteopathic principles, and each time I am more impressed with the weakness of the statement, "Nothing is known about the osteopathic lesion." For two weeks the class has devoted all of its study time to bulletin number six, and has been able to cover only the first three articles in this book, or approximately thirty-seven pages of material. It would be possible to spend the entire thirty-six hours allotted to this course on the materials of this book alone. By that I mean that there are enough pieces of experimental evidence relative to the osteopathic lesion in both experimental animals and the human subject to warrant the use of that much time.

In observing comment about the research work in osteopathy, and general professional opinion about the need for further investigation, I am forced to express the opinion that the work that already has been done, while not adequate, is of such nature that if the profession at large, and the students were familiar with every angle of it, practice would be improved, physical effort in treating would be lessened, and the prognosis from treatment would be improved. Perhaps one of the reasons that there has been a lack of appreciation of the immense amount of work that has been done by Dr. Louisa Burns and her associates is that neither the profession nor the students have been made familiar with the exact contents and interpretation of her work. Having tried this system of teaching once before, and repeating it after a period of about eight years, I find the detailed review of these bulletins as refreshing as it ever was, and the students responding to the study with renewed enthusiasm and pleasantly surprised at the amount of information actually available about the osteopathic lesion. Certainly if a means were available so that in some course in every osteopthic college detailed study of these bulletins was brought about, confidence in osteopathy as a system of practice would be strengthened definitely.

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ATLANTIC CITY CONVENTION

As this JOURNAL goes to press the forty-fifth annual convention of the American Osteopathic Association will be in session at Atlantic City, N. J. The location of the 1942 convention was decided last year at St. Louis. Los Angeles won and the dates for the meeting were set—July 13 to 17.

The addresses of the retiring and incoming Presidents of the A.O.A. are included in this issue of THE JOURNAL as well as the prize-winning paper of the 1941 osteopathic student essay contest. The assigned topic of the essay papers was "Osteopathic Principles Supporting Manipulative Treatment in Nephritis," and the contest was won by R. Wilbur Conn, class of 1942, Kirksville College of Osteopathy and Surgery. The prizes for this worth-while project are given by Dr. R. H. Singleton of Cleveland.

M.D. RECOGNITION OF OSTEOPATHIC WORKS

The appearance of references to osteopathic works in an old established and highly rated surgical journal is something worth commenting about. Instead of the usual derogatory remarks about osteopathy, it is refreshing to find in M. D. literature an honest expression of opinion and credit given to sources of information in osteopathic journals.

In an article on "Causalgic Backache" published in *The American Journal of Surgery*, May, 1941, the writers, Drs. O. C. Hudson, Carl A. Hettesheimer, and Percival A. Robin, list among the thirty-four references given at the end of the paper, two from osteopathic journals—*The Journal of Osteopathy*, (Kirksville, Mo.) April and May, 1935, and THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION, December, 1936. Both of the articles were written by Eugene R. Kraus, D.O., of New York City.

The M. D. writers say in the first paragraph of their article: "In osteopathic literature the authors have mentioned that a pelvic tilt may cause backache due to a primary short lower extremity. This condition they treat by an elevation within the shoe and by osteopathic manipulation."

They go on to prove the validity of the theory that a pelvic tilt may cause backache, by an experiment conducted in an individual who had no history of previous back complaints. A paraphrased account of this experiment is as follows:

Preliminary clinical and x-ray examinations of the subject were negative for any pathological bony condition. A three-fourths inch elevation was added to the heel of the left shoe. Examination of the patient standing with the adjusted shoes on revealed a pelvic tilt with the right side inclined downward. The spine showed a right thoracic, left lumbar scoliosis. The right thigh was abducted and the left thigh was adducted.

On the first day of the experiment the individual reported that there was a sensation of walking up hill on the adducted extremity. It appeared that most of the weight was being borne on the adducted extremity (right), while the subject was standing. (This was proved by having him stand with each foot on a separate spring balance.)

On the third day the subject reported considerable aching deep in the buttocks. By this time it was impossible for him to walk with comfort unless the entire right lower extremity was internally rotated.

At the end of one week the subject complained of a sense of tightness and pulling in the thoracolumbar region on bending; this was also true on straightening up. Definite tenderness was present paravertebrally in the thoracolumbar region and along the right twelfth rib. The right sacrospinalis muscles were spastic.

After three weeks' wearing of the lift the subject complained of pain radiating around the right side at the level of the twelfth nerve distribution. Hyperesthesia was present in the groin and along the right side of the chest. Pain coming on at night had been present for some time.

It was felt that the experiment had been conducted long enough so the lift was removed from the shoe of the subject and exercises prescribed. Two weeks later all of the symptoms had disappeared.

The experimental production of backache with the use of a lift in the shoe of a normal person seemed to prove to the satisfaction of the M.D. investigators that an anatomical short leg may cause the same condition. For want of a more appropriate term, the writers labeled the syndrome of back pain radiating along the twelfth rib and to the groin, accompanied by lordosis, postural scoliosis, a pelvic tilt, abduction and internal rotation of the femur on the side of the low iliac crest, and adduction of the thigh on the side of the high iliac crest, *causalgic backache*. Causalgia, or pain of a burning nature, describes briefly the sensation patients suffering from this type of structural abnormality experience.

These patients are examined roentgenologically in the supine as well as in the standing positions. The films taken in the standing position are ruled to show any differences in height of femoral heads and iliac crests, any difference in the costovertebral angles of the two sides, and any deviation of the lumbar vertebrae from the mid-line. In other words, these M. D. investigators are doing precisely what D.O.'s have been doing ever since Schwab[1] in 1932 called attention to the short-leg problem and Hoskins[2] described the

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method of determining accurately by the x-ray, differences in leg length.

The M. D. writers report their observations on a series of thirty cases as follows:

The etiologic factors were: injury to the back in ten; focal infection in eight; and no known cause in the remainder. The pain was right-sided in twenty-two cases and left-sided in eight. Ages varied from 20 to 48 years. There were fifteen females and fifteen males. The type of individual affected was the slender herbivorous type in twenty-eight cases and the stocky carnivorous type in two cases.

The elevation of the heel was usually ½ to ⅝ inch. The elevation was worn for three to four months and then lowered one-half for three to four more months. Some patients, on raising the heel, developed pain in the thigh along the abductor muscles on the opposite side and in the gluteal area on the same side. The pain is usually relieved in two to three weeks and the hyperesthesia in six to eight weeks.

Exercises are started when the pain begins to subside and are continued daily for six months.

It is predicted that reports dealing with this and related structural problems will begin to appear in increasing numbers in M.D. literature. So long as the osteopathic profession can keep in the vanguard of the structural field by publishing in its own journals reports of new findings based on clinical observations and carefully controlled research, it need not fear the avalanche of M.D. articles which may follow.

R.E.D.

CHANGING CONCEPTIONS OF PROTRUDED INTERVERTEBRAL DISCS

Recent literature on the subject of intervertebral disc protrusion seems to indicate that the role of this pathological condition in the production of low-back and sciatic pain is beginning to find its proper place. After the report of Mixter and Barr,[1] in 1934, every patient who complained of backache and sciatica was looked upon by the neurological surgeon as a possible case of disc disturbance. Henderson,[2] however, reported in 1939 that during a three-year period orthopedic consultants in the Mayo Clinic saw 10,000 patients who complained of low-back or sciatic pain, but only 188 or 1.9 per cent were subjected to operation for removal of protruded intervertebral disc.

Whether or not trauma is the predominant etiological factor has not been determined. Barr, Hampton and Mixter,[3] in 1937, reported that a history of trauma was obtained in 80 per cent of their cases. Love and Walsh,[4] in 1940 said that only 58 per cent of the patients in their series of 500 cases gave a history of specific injury to the back. Apparently protruded disc may occur with or without a history of trauma.

Concerning the diagnosis of protrusion of an intervertebral disc, the injection of lipiodol and roentgenological examination remains the most popular method, yet it has been noted that protrusion may be present and not visualized, especially when there is congenital shortening of the cul-de-sac or when the protrusion lies too far laterally to indent the sac.

More and more reliance is being placed on neurological findings. Spurling and Grantham[5] believe that in fully 50 per cent of the cases the level of the protruded disc can be accurately predicted. For instance, "if there is local tenderness of the third lumbar spine associated with hypesthesia and paresthesia in the fourth and fifth lumbar dermatomes, and a reduction or absence of the knee-jerk with the ankle-jerk unchanged, a protrusion is apt to be in the third lumbar interspace. If the localized tenderness is at the level of the fourth lamina with hypesthesia and paresthesia in the fifth lumbar and first sacral dermatomes, and ankle-jerks and knee-jerks uninvolved, the protrusion is in the fourth lumbar interspace. Likewise, if there is local tenderness to pressure over the fifth lumbar vertebra with hypesthesia involving the first and second sacral dermatomes, and a diminution or absence of the ankle-jerk, the protrusion is at the fifth lumbar interspace." The writers say that the accuracy of these signs was proved by the fact that in twenty-six consecutive cases herniations of the nucleus pulposus were found at operation without the preliminary use of lipiodol injections.

Even though neurological signs point to disc disturbance in certain cases of low-back and sciatic pain, there is beginning to appear in the literature a doubt as to whether all of them should be subjected to operation. Beadle,[6] who describes Schmorl's work on the spine, says that large numbers of spines were found to have disc protrusions into the neurocanal, and yet these patients evidently had carried on active lives with supposedly healthy spines for many years. Mock,[7] in a recent issue of *The American Journal of Surgery* says, "It is impossible to believe that the number of such positive cases has suddenly increased to the point of warranting such widespread laminectomies. It seems a justifiable conclusion to believe that many of these low-back pains and sciaticas would yield to less drastic treatment just as they have in the past." He is convinced that in a great many roentgenological examinations, depressions in the intervertebral surfaces of vertebral bodies and other intervertebral disc anomalies suggesting derangement of the nucleus pulposus can be demonstrated and that many of these are found coincidentally in patients without the least sign or symptom of back pathology.

Mock[7] also wonders if iodized oil injection is justified except in extreme cases and whether it is altogether devoid of danger. Further reports may

1. Mixter, W. J. and Barr, J. S.: Rupture of the Intervertebral Disc with Involvement of the Spinal Canal. New England Jour. Med., 1934, 211:210-215.

2. Henderson, Melvin S.: Discussion of an article by Walsh, M. N., and Love, J. G.: The Syndrome of the Protruded Intervertebral Disc. Proc. Staff Meet. Mayo Clin., 1939, 14:230-234.

3. Barr, J. D., Hampton, A. O., and Mixter, W. J.: Pain Low in the Back and "Sciatica." Jour. Am. Med. Assn., 1937, 109:1265-1270.

4. Love, J. G., and Walsh, Maurice N.: Intraspinal Protrusion of Intervertebral Discs. Arch. Surg., 1940, 40:454-484.

5. Spurling, R. Glen, and Grantham, Everett, G.: Neurologic Picture of Herniations of the Nucleus Pulposus in the Lower Part of the Lumbar Region. Arch. Surg., 1940, 40:375-388.

6. Beadle, Ormond A.: The Intervertebral Disc. Medical Research Council. His Majesty's Stationery Office, London, 1931.

7. Mock, Harry E.: Low-Back Pain and Trauma. Am. Jour. Surg., 1941 (Mar.) 51:779-802.

disprove the harmless nature of this procedure and lead to medicolegal difficulties. The presence of foreign material at the base of the spine, demonstrable by x-ray, may furnish the claim for the alleged continued back pain. King,[8] operating upon several patients in whom for some reason or other operation was delayed some time after the injection of lipiodol, found little encysted globules of the substance stuck on the side of the component parts of the cauda equina "like nitrogen, sticks on the roots of a pea vine." He also noticed that the blood vessels of the cauda equina were markedly injected and the roots seemed to be decidedly irritated. He is not convinced that lipiodol is harmless. He recommends that when lipiodol is used that laminectomy should follow immediately, at which time all of the lipiodol should be removed.

Mock pleads for a complete, thorough examination in every case of low-back or sciatic pain before a radical operation on the back is resorted to. Such conditions as kidney stone, gallstone, fibroid, metastic carcinoma and the numerous congenital anomalies which can cause backache should not be overlooked. He says also that "It is just as faddish, just as detrimental to give short wave diathermy, lamp treatment or other forms of physical therapy to such a back when other conditions in other parts of the body are responsible for the trouble."

Gilcreest[9] calls attention to the fact that a slip in a facet may cause disabling backache. He reports 150 cases of backache in which 70 per cent were cured, most of them in a few weeks, by manipulation. He says: "When one has a slip in a facet, it is just as definite as can be. I have had many strong stevedores and other laborers come to my office, having had a slip occur several days before and during that time they had been at home in bed. They had been unable to lean over and tie their shoes. On examination, one found a contracture of the muscles on that side with trigger points, sometimes pain up in the shoulder, occasionally in the face and about the eye on that side. The patient is put on the table and after the application of heat the back is slowly manipulated with the result that 70 per cent will be relieved. The acute pain will be all gone and just residual soreness left. Many will go back to work in a few days."

He says further: "This condition has not been generally recognized. I think it is sad that we have let the cultists take a very important part of medicine away from us and I am for returning them to the fold . . ." R. E. D.

8. King, Joseph E. J.: Discussion of an article by Raaf, John: Our Changing Ideas Concerning Protrusion of Intervertebral Discs. Am. Jour. Surg., 1941 (Mar.) 51:803-820.

9. Gilcreest, Edgar L.: Discussion of an article by Raaf, John. See reference 8.

PRELIMINARY REPORT OF THE KENNY TREATMENT OF INFANTILE PARALYSIS

Three years ago[1] the A.M.A. attempted to discredit the theories of Miss Elizabeth Kenny,[2] Australian nurse, who refused to accept orthodox methods for the treatment of victims of poliomyelitis and developed a system of therapeutics which proved to be far more successful than those recommended by leading M.D. orthopedists. The Australian government became convinced of the excellence of her work and opened clinics under her direction in North Queensland and later in Brisbane, Sydney, and Melbourne. She made a trip to England and demonstrated her methods in the London hospitals for crippled children.

In September, 1940, Sister Kenny came to the United States and the Minneapolis General Hospital and the University of Minnesota Hospital did the unorthodox thing of opening their doors to one who did not have an M.D. degree. Complete facilities of the two hospitals were given to her for the treatment of their poliomyelitis victims. A preliminary report of her work at these two hospitals is published in the *A.M.A. Journal*, June 7, 1941. The writers, Wallace H. Cole, M.D., and Miland E. Knapp, M.D., state:

> To date 26 patients with acute anterior poliomyelitis have been treated under our observation by [Sister Kenny's] method. Twenty received the . . . treatment within two weeks after the onset of the disease. Eleven have already been discharged completely normal. The average hospital stay of these patients was thirty-six and two-tenths days. Of the remaining 9, 1 has paralysis of both legs which will probably be permanent. One was admitted only three weeks before the date of writing.
>
> The other 7 are progressing satisfactorily, but it will take time to establish the extent of their final recovery.
>
> In this series 11 of 20 patients are normal within two months after the onset. It is expected that at least 5 of the others will recover completely within a reasonably short period of time.

In commenting upon these cases the writers say that the patients "were much more comfortable and cheerful during the acute stage than are those who are immobilized." No contractures or deformities were seen. They conclude that "harm has not resulted to any of the observed patients under Miss Kenny's care from 'abandonment of immobilization.'"

Now comes the announcement that the National Foundation for Infantile Paralysis has granted $10,000 for the continuation of the work of Sister Kenny at the Minnesota hospitals. The appropriation pays the expenses of Miss Kenny and two assistants and finances the training of a number of technicians for a period of eight months.

R. E. D.

1. Duffell, R. E.: Infantile Paralysis. Jour. Am. Osteop. Assn., 1938 (July) 37:519-521.

2. Kenny, Elizabeth: Infantile Paralysis and Cerebral Diplegia. Angus and Robertson, Ltd., 89-95 Castlereagh St., Sydney, Australia, 1937.

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Special Article

The Hospital Semester*

ROBERT D. McCULLOUGH, D.O., Superintendent, and L. RAYMOND HALL, D.O., Member of the Staff
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The senior class of the Kansas City College of Osteopathy and Surgery is divided into three sections. These include the hospital section, those taking the required semester of didactic work, and a third group composed of the students taking their regular vacation period.

The subject of discussion, the hospital semester, is the term used to designate the four months of hospital duty which every student must serve at the Conley Clinical Hospital during his senior year. This hospital work provides a course of intense, supervised training intended to equip the graduating physicians with some degree of practical knowledge of the proper care and treatment of any patient requiring institutional care.

The three groups of seniors work on a rotational basis in consequence of which the first hospital section serves from June 1 until October 1, the second from October 1 to February 1 and the last through February to June 1. The training covered by each period is identical so that a description of any one hospital semester will suffice for the remaining two.

The students comprising a given hospital section report for duty assignments a day or two in advance of the actual start of their training. It is inconsequential to which shift each student is assigned first since the duties are placed on a rotating basis. Each student will work on every shift at least once, and subsequently repeat those shifts which have been shown to be the most beneficial to the student's training.

The twenty-four-hour hospital day is divided into three main shifts, the duration of which are as follows: the morning shift from 7:00 a.m. to 3:00 p.m.; the afternoon shift from 3:00 p. m. to 11 p. m.; and the night shift comprising the interval until 7:00 the following morning. For purposes of illustration a short description of each shift will be included in the discussion of the material covered by the hospital semester.

The morning and afternoon sections are similarly divided into individual duties. These include assignments in the surgical department; in the obstetrical department, including the nursery; in the hospital laboratory as assistant under the interns' supervision; and another group which has as its duties the giving of the osteopathic manipulative treatment which all hospital patients receive (unless otherwise ordered) and attending the administration of venoclyses and hypodermoclyses. The night shift has only two duties: one in the obstetrical and nursery departments and one on general floor duty.

The surgery shift covers a period of five continuous weeks, during which time the student becomes familiar with sterile operating room technique. He becomes aware of the infinite details and work which lie unseen behind the smooth functioning of any modern operating room. Each student is required to learn the contents of, and to prepare, the various surgical "packs," and how to sterilize them in electrical high-pressure steam autoclaves. During one of the weeks each student writes the surgical record of all operations, thus acquainting himself with the technical terms and procedures of this work and how it should be recorded for future reference.

Ample opportunity is afforded the individual to study the actual administration of various anesthetic agents in the hands of competent anesthetists. During the last week in surgery the student scrubs for, and assists in, all minor and major operations. He learns the fundamentals of sterile technique in handling the instruments, sutures, sponges and other essential materials used in the multiplicity of surgical procedures and sees their use in the hands of skilled surgeons. In brief, the surgery division is intended to provide the senior with a sufficient general knowledge of surgical procedures that he may creditably conduct himself in any hospital.

The assignment of intern's assistant is nearly self-explanatory. The student constantly accompanies the intern on his ward walks, assisting with the dressings, examinations, intravenous work and other duties of the intern, always carefully observing each procedure.

While on the general floor duty division, the senior gives all the ordered medications and becomes more closely acquainted with the indications for, and the actions of, a number of drugs which are used as adjunctive therapy in the Conley Clinical Hospital. He familiarizes himself with the technique of bedside osteopathic manipulative treatment since he is charged with giving the specially ordered osteopathic treatment, and assists in giving the osteopathic manipulative treatment which each patient receives twice daily unless otherwise ordered.

All dressings are observed and the patients' charts are closely studied so that a liberal amount of valuable information may be gained for future reference in general practice. An opportunity is presented also to observe the conduct of graduate staff physicians in the care of the patients, and talking with them.

The obstetrical and nursery service is a highly practical one, since the student assumes charge of the nursery and actually handles and cares for the babies under adequate supervision of the obstetrical nurses or the obstetrician in charge. The purpose is to teach the undergraduate through actual practice how to handle infants, to plan formulae and properly administer, and properly to conduct the post-partum care of the obstetrical patients.

The laboratory section is conducted under the supervision of the interns, but each student laboratory technician obtains the various blood and urine

*This is the fourth of a series of special articles concerning osteopathic education sponsored by the Associated Colleges of Osteopathy

samples, performs the indicated tests on them and reports his findings. An opportunity is thus afforded for the correlation of a given patient's history and physical findings with the actual laboratory work performed by the student. Since in the small hospital each patient is not merely a number but an individual with whom the technician can become acquainted, ample opportunity is offered for a complete study of his case by the laboratory detail. In addition, each senior must apply his book knowledge of laboratory technique and become thoroughly familiar with the performance of the more common procedures.

The so-called "Duty A" is a shift with a multiplicity of responsibilities. Among these may be enumerated the giving of osteopathic manipulative treatment which already has been mentioned as a part of the care received by every patient and attending patients during the administration of venoclyses and hypodermoclyses, besides a host of other assignments. As on other general duty shifts, the changes of dressings are observed and at all times the patients' charts are available for study so that certain conclusions may be drawn regarding the effectiveness of the various forms of treatment, and first-hand knowledge of the convalescence of postoperative cases may be obtained.

The relief shift consists of a week of successively changing terms of duty on each of the divisions described thus far. Since every member of the hospital group is given one day of rest each week, this period of service accomplishes several purposes. Not only does it provide the necessary substitutions for authorized absences, but it stimulates initiative and skill in performing a diversified array of tasks besides keeping the individual aware of the duties performed by each group.

Regarding the rest periods, it is an established policy in the hospital that the senior works six days and has a seventh one free, as previously mentioned. The different divisions have various days off, with a majority of them occurring on Sunday. The relief section supplies the necessary substitutions for the deficiency of students which might otherwise occur and leave the institution understaffed. All unauthorized absences must be made up by the offending individual.

In addition to the three main divisions described, there is another shift which is concerned with the x-ray department and record files, the hours of service of which correspond to the periods when the x-ray department is functioning. A part of the work assigned here is to assist the hospital clerks in keeping the hospital records up to date, a practical experience for later private office records. Another requirement of this division is that the student assisting in the x-ray assignment hears each patient's history and admitting diagnosis, along with the reasons for ordering roentgenological studies. Further, he assists in the development of the radiographic plates and is present when the films are interpreted and explained by the roentgenologist in charge.

During his tenure of service in the hospital, the student assumes full responsibility for every task assigned to him and is held strictly accountable for its performance. Each member is required to write a complete account of ten actual case histories of patients in the hospital, from entrance to dismissal. Upon completion of the training period, a comprehensive examination is given the entire group, a written test, covering the work presented to them during the period spent at the hospital.

In conclusion, a brief outline of the student activities in an operating teaching hospital has been presented, with the full realization that many details, while important, would not be of interest to the average reader of this discussion. It has been the goal of the staff of the Conley Clinical Hospital to present to the senior class of the Kansas City College of Osteopathy and Surgery a reasonably thorough, though necessarily limited, course of practical hospital training, so that those who go out into general practice without the benefit of a year's internship, will not be entirely unprepared to cope with the problems presented in the hospitalization of their patients. The staff members always have welcomed any inquiries any student might have regarding the diagnosis, treatment or progress of the patients confined in this institution. It is the sincere desire of all concerned that this hospital will continue to contribute more than its share to the advancement of osteopathic education.

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WDZ—1020 kilocycles, Tuscola, Ill., second and fourth Wednesdays of each month, 1:30 p.m., Illinois Osteopathic Association.

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Orthopedic Section

FRACTURES OF THE BONES OF THE FOREARM*

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It is an accepted fact that fractures of the forearm offer more problems in mechanics than any other fractures in the body, because the forearm controls the many intricate motions of the hand. The radius is chiefly concerned with the motions of the hand and forms an important part of the wrist joint while the ulna is an important part of the elbow and is chiefly concerned with the motions of the arm. The radius and ulna are joined together by the interosseous membrane with the fibers running slightly upward from the ulna to the radius. Because of the position of these fibers, a blow struck on the hand, driving the radius upward, places a direct pull upon the ulna. If this blow is strong enough to fracture the bones, the interosseous membrane has a tendency to draw the fractured ends together.

Supination and pronation of the forearm are accomplished by rotation of the radius around the ulna. This rotation occurs at the superior and inferior radioulnar articulations with a normal range of approximately 160 degrees. The axis upon which the forearm and hand rotate passes through the center of the head of the radius above and through the styloid process of the ulna and the ring finger below.

The shafts of the radius and ulna are widely separated and are parallel when in full supination, while in pronation, the curved shaft of the radius crosses the shaft of the ulna at the junction of the middle and upper thirds. The bones are closely approximated at this point. The interosseous space is widest when the forearm is in mid-position and narrowest when the forearm is fully pronated. All of the important vessels and nerves of the forearm lie in the anterior fascial compartment with the exception of the posterior interosseous branch of the radial nerve and the small interosseous artery.

EXAMINATION

The examination of the forearm, in case fracture is known or suspected, should be very thorough and should consist of a careful case history, palpation, inspection, and x-ray examination in two planes.

It is unwise to postpone the reduction of a fracture of the forearm even for a day or two because the retraction of the fasciae, the round cell infiltration of the soft parts, the rigidity of the shortened muscles and the swelling of the soft parts will all hinder the procedure and render it difficult. It must be remembered that the quickest subsidence of swelling associated with fracture of the forearm will be brought about by immediately adjusting the fractured fragments. The earlier reduction is attempted, the easier it will be and the earlier the fracture is reduced, the better will be the repair. Also, the more accurate and immediate the reduction, the smaller will be the callus formation, and in the forearm, a minimum amount of callus is desirable.

FRACTURES OF THE ULNA

Fractures of the ulna are classified as fractures of the olecranon with or without displacement, fractures of the shaft with or without displacement and fractures of the shafts of the radius and ulna, with or without displacement. Fractures of the shaft can be transverse, oblique, spiral, comminuted or impacted.

FRACTURES OF THE OLECRANON

Fracture of the olecranon is caused by the combination of a fall on the elbow or forearm and the action of the triceps muscle which is attached to the tip of the olecranon. Fractures of the olecranon always open up the elbow joint. The amount of space between the fragments is determined by (1) the extent of fascial laceration; (2) position of the arm, whether it is flexed or extended, since flexion increases the space; (3) the amount of synovial fluid and blood in the joint—the more fluid the greater the separation.

Symptoms.—The symptoms of a fractured olecranon may be so slight that it can be mistaken for a simple sprained elbow except for the persistent pain and inability to extend the forearm. There is pain at the site of fracture, crepitus, swelling, and marked ecchymosis.

Treatment.—A case of injury around the elbow joint should always be x-rayed in flexion and extension as well as in palmar, dorsal and lateral planes. Treatment of a fractured olecranon depends upon the age of the patient and whether or not there is any separation of the fragments. If there is little or no separation, a right-angle splint will do very well. If there is separation of a half inch or more, full extension should be used with the anterior splint running from the axilla to the mid-line of the palm so as to enable the fingers to have full motion.

If there is much swelling above the elbow, the patient should be kept in bed with the arm elevated on pillows. As the swelling subsides, the arm may be lowered, and the splint and bandages should be adjusted to the new contour of the arm.

The arm should always be re-x-rayed two days after setting. If the fragments are in good position, low-voltage sinusoidal current should be applied daily with one electrode resting on the upper thoracic region of the back and the other first on the palm of the hand and then on the dorsum. On the tenth day, the splint should be removed and the arm given gentle manipulation and slight flexion. The fracture line should always be checked under the fluoroscope as slight flexion is applied to make sure that the fragments are not pulling apart.

If the arm has been put up in extension, it should be ready to place in a 90 degree splint three weeks from date of setting. A final x-ray checkup is made at the end of four weeks and if this is satisfactory, full use of the arm is advocated.

In the case of compound fracture from without in, the wound is treated as a major surgical condition. If the fragments cannot be drawn together by casting, it will be necessary to unite the fragments by open operation. This will not be discussed in this paper.

FRACTURE OF THE CORONOID PROCESS OF THE ULNA

On flexion, the coronoid process comes in contact with the coronoid fossa in the humerus, with the upper end forming a portion of the sigmoid cavity. The most common cause of fracture of the coronoid process is direct trauma to it or by hyperflexion placing direct strain on the process and producing a transverse fracture with dorsal dislocation of the ulnar shaft.

Symptoms.—Marked swelling with pain over the anterior portion of the elbow joint should always make one suspicious of fracture of the coronoid process. Recurrent dislocation of the elbow always should be checked for fracture of a small piece of the coronoid process. These cases always should be x-rayed in two planes.

Treatment.—With the patient under general anesthesia the fragments should be molded into place with the arm in extension. Then the arm should slowly and carefully be flexed to a right angle with the forearm in a neutral position and rechecked by the x-ray. In my own practice I also check all of these conditions with the fluoroscope after which my final x-ray is made for the records.

If everything is found to be in normal position, an anterior molded splint running from the mid-palm to the axilla, and a posterior molded splint running from the

*Delivered before the Orthopedic Section at the Forty-fourth Annual Convention of the American Osteopathic Association, St. Louis, June 24, 1940.

metacarpal heads to the shoulder, are applied. If the fracture is complicated by dislocation of the elbow, the dislocation must first be reduced by extension to 180 degrees. This should be followed by traction and flexion to right angles. Then, molding the coronoid fragment back into position, there should be a check by x-ray followed by splinting in the right angle position.

The aftercare is the same as described for the treatment of a fractured olecranon.

FRACTURE OF THE SHAFT OF THE ULNA

Fractures of the shaft of the ulna, without associated radial fractures, are the result of direct trauma and most commonly are found in the middle two-fourths. The fracture may be greenstick or complete, transverse, comminuted, oblique, spiral, longitudinal or impacted.

Due to the splinting action of the radius, there is very little overlapping of the fractured ends. However, the head of the radius often is fractured and displaced. One always should look for an anterior dislocation of the radial head in conjunction with a fracture of the ulnar shaft because the orbicular ligament generally gives way before the bone breaks. The interosseous membrane remains intact and thus limits the amount of displacement of the fragments.

Diagnosis.—The patient generally will complain of a slight pain in the arm. Palpation will bring out severe tenderness over the site of injury. Swelling and ecchymosis appear early. In young children a greenstick fracture always must be kept in mind and the arm x-rayed even if there is no deformity present. It must be remembered that deformity will vary according to the amount of displacement present. The most common displacement is an anterior angulation. When the displacement is great, the shortening of the ulna gives definite angulation over the site of the injury.

The special importance of this injury lies in the frequency with which dislocation is overlooked. One should look for dislocation of the radial head, especially when there is an anterior displacement of the fragments. If there is radial head dislocation, swelling and tenderness can be found over the upper end of the radius, with a depression where the head of the bone should be. Rotation of the forearm always will be painful and limited in a case of this type.

Treatment.—Fractures of the shaft of the ulna should be so treated as to restore the shaft to its normal form since it is the more important bone of the forearm and forms part of the elbow.

Fractures without displacement should be immobilized by anterior and posterior molded splints over a small amount of sheet wadding wide enough to overlap the lateral aspects of the forearm. When the fracture is proximal to the distal fifth of the shaft, the splinting should extend from the metacarpal heads to above the elbow. The sugar-tongs splint is the easiest applied for a condition of this type.

With anterior bowing, the bones are best retained in position with the hands flexed at the wrist or in the neutral position. After seven to ten days, when the callus is formed and progress is being made, the extension position should be taken and new splints applied with the arm in supination and the elbow flexed to a right angle.

FRACTURES OF THE ULNAR SHAFT WITH DISPLACEMENT

Traction, counter-traction and manipulation under general anesthesia should be used to break up impaction, reduce angulation, overriding, rotation, and comminution. The hand should be deviated radially during the following procedure: The arm is splinted with anterior and posterior molded splints in the same manner as described in the treatment for no displacement. If it is impossible to hold the fragments by this method, open reduction will be necessary.

FRACTURES OF THE HEAD AND NECK OF THE RADIUS

Permanent disability frequently follows fractures of the head and neck of the radius. Fractures of the head of the radius include those fractures in which the fracture line involves the radioulnar joint capsule. Complete fractures of the head of the radius include marginal, comminuted, those extending into the neck, and those involving displacements of the epiphysis.

Fractures of the neck of the radius include those below the head and above the bicipital tubercle. They can be complete or incomplete. The extent of laceration of the orbicular ligament, together with the amount of unreducible displacement of the fragments determine the amount of subsequent disability. When the fracture is confined to the head and the upper part of the neck of the radius, it is wholly intracapsular or within the orbicular ligament. The fracture is generally longitudinal, splitting the edges of the button-like head. This type of fracture is generally sustained by a fall upon the outstretched pronated hand with the elbow extended. It generally results in fracture of the head in adults, and of the neck in youths. Neglected cases of fracture of the radial head may result in elbow ankylosis.

Symptoms.—Swelling and ecchymosis develop early with the swelling and pain most prominent at the dorsum of the elbow on the external side. There are restriction of movement and pain on extension, flexion, pronation and supination. Crepitus is not always present.

Treatment.—If the injury has resulted in a crack or lineal fissure, the forearm should be immobilized at right angles in full supination. It is carried in this position with frequent checkups on the bandages for ten days, after which guarded motion is started in the elbow with very slight rotation of the radial head. This is followed up by daily massage and sinusoidal current. The arm can be taken out of the sling at the end of three weeks and the patient allowed to resume the normal use of the arm excepting in the case of laborers. Their release to active duty should be more guarded and after a longer period.

If the head of the radius is displaced beyond reduction, all fragments should be removed at once, the annular ligament carefully repaired and the wound closed without drainage. However, if the arm is badly swollen, one should wait for the swelling to subside before initiating any type of treatment. This is the only indication for delay.

Active guarded motion should be started one week after the operation. This should be built up carefully until normal elbow motion is regained in six to eight weeks.

In children and youths the elbow should be placed in an acutely flexed position with the forearm in complete supination after manipulation has restored the fragments to their normal relationship. Guarded, careful motion can be started at the end of ten days followed by daily treatment with massage, stretching, and sinusoidal current.

Open operation always should be considered in old cases of nonunion and malunion, as adhesions and excessive callus formation impair the usefulness of the joint.

FRACTURES OF THE SHAFT OF THE RADIUS

Fractures of the shaft of the radius are usually transverse, oblique, spiral or comminuted and generally are the result of direct trauma. The most common location of fracture is about the middle third of the shaft. Swelling, ecchymosis, localized pain and deformity are the most common symptoms noted following an injury of this sort. The deformity may be a slight bowing or a definite angulation. Pronation and supination are limited and painful.

Treatment.—General anesthesia is necessary to obtain enough relaxation to secure the necessary apposition of the fragments. When the fracture is located high in the shaft, the forearm should be supinated with the elbow flexed at a right angle. All necessary manipulation and extension should be carried out from this position. Many times the only possible method of holding the fragments in line is by open reduction.

Fracture of the lower third of the shaft of the radius is often accompanied by fracture of the lower end of the ulna, with separation of the inferior radioulnar articulation and with a displacement of the lower end of the ulna.

When the fracture is located at or below the middle portion of the shaft, a position midway between complete pronation and complete supination, with the elbow at right angles, is usually satisfactory for maintaining the positions of the fragments. When the fracture is low in the shaft,

the arm should be immobilized in mid-supination with the hand adducted to hold the upper end of the lower fragments away from the ulna.

After reduction, the forearm should be put up in plaster-of-paris anterior and posterior splints which can be molded and adjusted easily. After fourteen days, the dorsal splint should be removed for treatment and sinusoidal current should be given daily. At the eighteenth day the splints can be removed and careful, guarded motion can be started. The splints should be worn, however, for five weeks. No rotation of any type should be allowed for the entire period splints are worn.

FRACTURES OF THE SHAFTS OF THE RADIUS AND ULNA

The necessity of securing normal motion at the upper and lower radioulnar joints is so important in the treatment of fracture of the shafts of these bones, and this movement may be so greatly impaired by deviations of the four fragments, that it is essential not only to secure alignment of the shaft fragments of the respective bones, but also to place the fragments in a perfect end to end apposition.

In adults, the two bones may be fractured at the same or at different levels. There may be overriding, angulation or comminution of the fragments so that delayed union, malunion or nonunion may result. It must be remembered that delay in union of the shafts of the radius or ulna is common in adults while re-fracture is very common in children. The power of rotation, especially supination, may be lost or greatly impaired, with the result that the usefulness of the hand will be greatly reduced.

Treatment.—When both bones are broken and displaced, four fragments must be brought into alignment, while rotary displacement, in addition to the deformity of the antero-posterior and lateral planes, must be corrected.

Manipulative reduction should be attempted in all cases of simple fractures with displacement when seen shortly after injury. This manipulation should be done under general anesthesia with the aid of the fluoroscope.

Correction of overriding, rotation, and angulation of the fragments should be attempted with the assistant gripping the forearm just below the bent elbow and the surgeon gripping the wrist to obtain traction and countertraction.

After reduction, the forearm should be held in full supination and should be immobilized in this position with the elbow bent at a right angle: Anterior and posterior molded plaster splints, extending from the shoulder to the base of the fingers, should be applied at this time, and carefully adjusted daily until all swelling has left the hand and arm. These splints should remain in position from five to seven weeks according to the progress of the repair.

COLLES' FRACTURE

A true Colles' fracture involves the lower end of the radius below a level of one inch above the articular surface. Such fractures are classified as extra- and intra-articular, greenstick, complete, comminuted, and impacted.

The most common causes of Colles' fracture are: (1) a fall on the extended outstretched hand; (2) the kickback of a crank used in starting a motor. One always should suspect a "sprained wrist" suffered in either of these accidents.

Symptoms.—Swelling and ecchymosis are marked on the dorsum of the hand with local tenderness on pressure, deformity (silver-fork type) and lateral deviation, pain and restricted motion on flexion, extension, and rotation. It also will be noticed that the styloid processes of the radius and ulna are no longer at their normal levels.

Treatment.—To reduce a Colles' fracture one should grasp firmly with one hand the patient's hand and wrist (the lower fragment of the radius), and with the other, the upper fragment just above the fracture.

The two fragments of the fracture should be disengaged by traction on the lower fragment and by hyperextending the wrist. One should make sure that any existing impaction is completely broken up and freed. Second, the distal radial fragment should be pronated by rotation using the ulnar head as a pivot and at the same time making a lifting push backward on the ulnar head so as to correct its slump or forward dislocation. Third, the wrist should be flexed gently to maintain the lower fragment in its reduced position. One should remember that forcible flexion may cause harm to the median nerve with a resultant paralysis.

When the reduction is completed, the hand should be allowed to rest naturally without support to determine whether there is a recurrence of the deformity. If the deformity does recur, note the direction of displacement of the lower fragment so that the proper retentive apparatus can be applied.

In the treatment of a Colles' fracture the object is to give the patient a normal functional and anatomical hand as well as a painless one. Every sprained wrist must be x-rayed, as many Colles' fractures without displacement are missed by any other type of examination.

The type of Colles' fracture determines how the arm should be put up. In the Colles' fracture without displacement, a splint always should be used to make sure that displacement and malalignment do not occur at a later date. Anterior and posterior molded plaster splints should be applied after the reduction of all Colles' fractures. The splints should extend from the metacarpal heads to just below the elbow and should be checked daily. A good point to remember is that until the time of union, the arm should be comfortable. The bandages should be adjusted daily until all swelling is out of the arm.

At the end of the first week, the dorsal splint should be removed carefully and low-voltage sinusoidal current started through the arm and hand twice daily if the patient is at the hospital and once daily if an outpatient.

At the end of the second week, active and passive movements of the fingers are encouraged, especially of the thumb and first finger. At the end of the fourth week, if the x-ray film reveals normal healing, the splints are removed completely and a small dorsal splint is applied with Ace bandage. The arm still should be supported by a sling and should rest on the ulnar side. After five weeks, if everything is progressing according to schedule, all splints are removed and a wrist strap is substituted. In those patients past middle age, exercises of the shoulder and osteopathic manipulative treatment are instituted at the start and carried out throughout the period of treatment.

REVERSE COLLES' or SMITH'S FRACTURE

A reversed Colles' or Smith's fracture is produced by a fall on the dorsum of the hand causing an anterior displacement of the distal fragment with accompanying dorsal displacement of the shaft of the radius.

The treatment of a reversed Colles' fracture differs from the treatment of the usual type only in the method of reduction and the position of the retaining pads. An anterior palmar pad will be needed over the lower fragment and a posterior dorsal pad over the shaft of the radius Post-fracture treatment will be as for the true Colles' fracture.

FRACTURE OF THE CARPAL SCAPHOID BONE

The carpal scaphoid bone is the most frequently fractured bone in the wrist. Usually it is caused by a fall upon, or striking a blow with the dorsally flexed hand. The patient complains of a "sprained wrist" with the tenderness centered over the dorsum of the scaphoid bone. He complains of limitation of motion, pain on adduction, and the loss of his grip.

Treatment.—Every sprained wrist should be x-rayed in two planes. If the fragments are not displaced, the wrist and thumb must be immobilized for seven to eight weeks with the hand in radial deviation and in perfect dorsal alignment with the arm (neutral position).

If, after eight weeks, there is malposition of fragments, with nonunion, these fragments should be removed surgically. Great care must be exercised to determine whether or not the wrist should be operated upon, as many times a fibrous union has formed which does not show on the x-ray film.

After an operation in which an attempt is made first to pry the fragments together before removing the displaced fragments, the wrist should be closed and the hand put up in radial deviation in the cockup position.

In closing, allow me to state again, that every sprained arm and wrist should be treated as a fracture case until the x-ray proves otherwise. We must remember also that our work is only half finished when the fragments are in perfect alignment and a good callus has started to form. *Then* is the time that our osteopathic training and treatment determines whether the patient is to have a perfectly functioning arm and hand or whether he will have to spend months trying to regain the use of a stiff hand and arm.

40 S. Third St.

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Obstetrics and Gynecology Section

THE MANIPULATIVE PHASE OF PRENATAL CARE*

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The manipulative care of a patient during pregnancy is only one phase, but a highly important part, of a doctor's services to the expectant mother. Whether or not the patient has been accustomed to osteopathic care, she should be given a complete structural examination at her first visit to the physician. At times during the first several treatments the obstetrician should explain to her the need for, and the benefits of, osteopathy during pregnancy.

All organs undergo a certain amount of change as a result of pregnancy. It is physiological to be sure, but any inefficiency of one organ before pregnancy may be the cause of trouble when an added load is placed upon it. The woman with a rheumatic heart or one who gives a history of nephritis needs especial care. Osteopathic manipulative treatment to the reflex centers of the damaged viscera will help them to function to the extent of their ability. The endocrine system must, of necessity, be subject to considerable change. There is suppression of ovarian follicular activity and an establishment of corpus luteum activity. Not only is the uterus affected but the mammary glands as well, and in a lesser degree various glands of the endocrine chain. In women who have large, pendulous breasts before pregnancy, and in those who develop considerable colostrum during pregnancy, there may be found occasional instances of mastitis. Joint lesions in the thoracic region of the spine will often be associated with such a condition and a correction of the specific lesions, usually of the fourth and fifth thoracic, will help to resolve the mastitis quickly. Support of the breast and icebags over it are also of value in alleviating the condition.

Severe tension on the round ligaments can be relieved by having the patient assume a knee-chest position after correction of any innominate lesions.

History of accidents to bony structure is as important as that of visceral disease. Pelvic fractures or injury to the lower extremities may have resulted in some joint alterations of the pelvis. It is easier to be warned ahead of time about any possible obstruction to labor than to be confronted with it after labor begins.

A prenatal patient should be seen and treated regularly at least every two weeks during the first seven months and once a week thereafter. In some instances it may be necessary to see the patient two or more times a week. This is an individual matter depending on the case.

The care of obstetrical patients which is distinctively osteopathic is directed toward normalizing tension of all spinal structures as well as those of the pelvis. Two things demand attention: first, the osteopathic pathology present in the individual preceding pregnancy, and second, the probable conditions due to pregnancy itself. The former is dependent upon the individual make-up and hence can exhibit a wide variation. The latter, though dependent somewhat on the former, is more generalized in all cases since the change in body balance is largely responsible for the frequently recurring lesions. With abdominal weight and size increasing, the lumbar spine is extended more and more so that a marked lordosis results. To compensate for this the shoulders are held far back of the mid-malleolar line and thus a pronounced dorsal convexity or kyphosis is produced. These balance changes alone can decrease the mobility of the vertebral articulations and when such postural deviations are superimposed upon older chronic lesions, regions of acute spasm can be expected.

During pregnancy the pelvic ligaments become more elastic to make ready for parturition. This fact means that joint lesions can occur more easily and also that their correction requires less force than under non-pregnant conditions. Lesions correct easily as a rule. The correction of the eighth and ninth thoracic often gives much relief to a patient who feels exhausted and dragged down. Extension of the seventh to tenth thoracic affords a release from strain low down in the back. This lower thoracic region is at the level of transition from the anteriorly exaggerated lumbar curve to posterior thoracic curve. It is the region containing the autonomic nerves supplying the suprarenal gland. In any patient a stimulation of that gland will decrease fatigue and give the individual an almost immediate sense of well-being. The pregnant woman benefits greatly from a technic which extends the whole spine and at the same time exerts steady pressure bilaterally to the lower thoracic region. A means of doing this is to have the patient sit on a stool in front of the operator who sits on the table and applies both knees padded with a pillow as close to the patient's spine as possible at the lower thoracic level. Then with the patient's hands behind her neck, the operator extends the entire spine and at the end of a deep inspiration applies a gradually accumulated force through his knees to the patient's lower thoracic vertebrae.

Pelvic corrections when necessary put the patient in the best possible condition for the delivery of the baby. Muscles which work evenly and to the greatest of their ability without going into spasm will expel the baby efficiently. The working of the muscles depends upon their nerve and blood supply as well as upon their structural position. The pelvis needs particular attention, not only because it is the location of the rapid physiological changes but also because osteopathically it is the foundation for the spinal column. A sacroiliac lesion not only throws off balance the pelvic muscles and ligaments, but also "ties up" many of the segments above. In correcting the sacroiliac lesion one must consider the entire pelvic pathology from the osteopathic view. The patient may complain of pain over the sacroiliac joint which is the more freely movable because that one works overtime to make up for the fixa-

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tion of the other. In certain cases of an anterior sacrum on one side pain develops on the other. Ordinarily in nonpregnant patients one attempts to correct both sides of the sacrum, but it is essential to maintain correction of the first side while correcting the other. Thus it is wise to move the more restricted side first, whether that be anterior or posterior. When an anterior sacrum is found, one generally considers that the major factor of a pelvic twist, but in obstetrical patients I have found that correction of the posterior sacrum alone affords just as good results—often with less pain and more lasting effect than when the anterior side or both are attempted.

As was mentioned before, the pelvic ligaments are more relaxed in pregnancy than in nonpregnancy and we cannot expect the mechanics to be the same. Any harm resulting from osteopathic treatment during pregnancy is more often due to overtreating than otherwise. Specific correction with forces accurately accumulated will benefit the patient. Heavy manipulative treatment, especially at the time when menstruation normally would occur during early pregnancy, perhaps should be avoided, especially in those who have had repeated abortions. On the other hand, correction of particular lesions can be the determining factor in preventing an abortion but that is best done before a pregnancy starts. One must not overlook the possibility of structural imbalance from a short lower extremity. Correction of this can improve the stability of the pelvic joints and they, in turn, have their effect on all segments above. In attempting to normalize structural conditions, the patient should be asked to cooperate by avoiding occupational positions which will make lesions recur and by wearing a heel which is low and broad enough to support her well. This point needs to be stressed particularly for obstetrical patients whose postural balance is changing constantly over a short period.

Osteopathic manipulative treatment affords great relief to the patient during pregnancy. Anyone who has treated pregnant women can vouch for that and whether or not the delivery itself is done by the osteopathic physician, there is a great need for care beforehand. It is during the prenatal period that the patient is prepared for delivery, not after labor has begun.

SUMMARY

The prenatal patient should know from the beginning that she is being cared for by an osteopathic physician and she should know why osteopathy is of special benefit to her during this time. By regular treatment, all body functions can be most readily adjusted to the demands of pregnancy. Specific lesion correction will aid many of the discomforts incident to gestation and place the childbirth mechanism in good working order.

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Physical Therapy Section

PRECANCEROUS LESIONS AND THEIR MANAGEMENT*

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This discussion will be limited to precancerous lesions of the skin and oral cavity because, first, consideration of all aspects of the subject is too extensive for one paper and, second, the general practitioner and especially those who are doing any amount of physiotherapy will have a special interest in lesions of this character. The early recognition and the adequate treatment of these lesions which lead to or predispose to cancer is an important phase of cancer education. Ewing says, "Preventive medicine passes readily from one triumph to another, while curative medicine struggles vainly against the momentum of established pathological processes. . . ." Prevention of skin cancer looks toward actual avoidance of a fully developed cancerous process, and especially to the control of the process before it becomes clinically malignant. Cancer of the lip and tongue and oral cavity are the most preventable forms of malignant disease. Every doctor is familiar with the disgusting uncleanliness and neglect usually found in patients suffering from cancers of the lip or oral cavity. Broken, decayed, ragged teeth, pyorrhea, old broken or ill-fitting dentures are frequently found. Electrochemical irritation due to ionization by weak electrical currents flowing between electrodes of unlike metal fillings and restorations has also been found to cause cancer in the mouth. Uncleanliness, leading to stoppage of gland ducts and aided by bacterial infection and chemical irritation, is an important cause of many skin cancers.

A careful study of available statistics indicates that in this country cancer of the skin and orificial mucous membrane accounts for 6 per cent of cancer deaths, and these are all accessible cancers most of which should have been prevented or cured.

The term precancerous dermatosis has long been used to indicate a group of skin diseases or lesions that frequently lead to cancer. Many of these lesions are not universally recognized by the physician, so a brief description will be given of those which most frequently cause trouble later on, in addition to a discussion of treatment.

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KERATOSES

Keratoses are very common and are very frequently the forerunners of malignant disease of the skin.

Senile keratoses are most often found on the face, ears, back of hands and forearms of old people. They are often multiple, usually of irregular contour and consist of a greyish or brownish thickened horny scale, firmly adherent. These scales sometimes drop off but usually recur. The senile changes resulting in lessened elasticity and blood supply of the skin, together with lowered tolerance to actinic effect is a possible explanation of the cause. Senile keratosis is probably the most common and one of the most dangerous precancerous lesions. Epithelioma of either basal or squamous-cell type may result. Squamous-celled epitheliomata are most frequent. Lesions occurring on the lips are especially dangerous and almost always develop into squamous-cell epithelioma unless completely destroyed as soon as possible. Elderly patients with multiple lesions of the skin should be kept under observation but only the lesions which appear to be changing should be destroyed. A very satisfactory method is electrodesiccation. After anesthetizing the area with 1 or 2 per cent novocaine solution, thoroughly desiccate the lesion, then curette away the dehydrated tissues and desiccate the base of the wound. Usually no dressing is used and the patient is urged to allow the area to heal without disturbing the scab. If infection occurs, a pock mark will result. Actual cautery may be used or surgical removal by excision may be done on larger lesions. Radium in the form of a glazed half-strength plaque unscreened for 3 to 5 minutes is quite satisfactory for small, thin lesions. Thicker keratoses respond better to filtered radiation. 0.5 or 1.0 mm Al—contact for from 5 to 10 minutes repeated 4 to 6 times at intervals of 1 week, or a single massive dose of from 20 to 60 minutes. X-rays, 100 Kv, unfiltered, 75 r in weekly doses for from 4 to 8 weeks or 300 r in one single dose may be used.

Seborrheic keratoses occur on the trunk and face in elderly patients. They vary greatly in size, usually brownish-black or yellowish-brown, sharply circumscribed, elevated, usually rough, occasionally warty, developing slowly. These lesions only occasionally become cancerous, usually of the basal-cell type, rarely of the squamous-cell variety. No treatment is necessary unless changes are evident except for cosmetic purposes, and then the same treatment may be employed as for senile keratoses.

Industrial keratoses, including farmers' or sailors' skin, are due to prolonged exposures to grease, tar, paraffin, arsenic, etc., and to strong sunlight and wind. They are best treated by change of occupation or avoidance of contact with the irritating substance. Lesions which do not heal should be thoroughly destroyed by electrodesiccation. Those which show changes suggesting malignancy may also be treated by radiation, either by radium or X-rays.

LEUKOPLAKIA

Leukoplakia occurs in irregular patches on the mucous membrane of the tongue, lip, and cheeks. It may occur in the pharynx or on the genitalia. The areas are pearly or milky white, usually smooth and glistening. Advanced cases become fissured and furrowed. Usually the membrane is slightly thickened, occasionally thinned. A few cases become markedly thickened and horny with accompanying erosion, exfoliation and inflammation. This latter condition is sometimes called leucokeratosis. The condition is usually symptomless, unless inflammatory. The tongue occasionally develops warty vegetations which are frequently malignant.

Syphilis is said to be a cause, but the disease is often seen in patients who have never had syphilis. Heavy smoking or the habitual use of very hot drinks may be a cause. Lack of oral cleanliness and oral sepsis is also a cause. When epitheliomas develop in these lesions they are usually of the squamous-cell type. Some grow with great rapidity and others progress slowly.

The treatment consists of careful observation of the patient at intervals of 3 to 5 weeks. All irritants such as tobacco, hot drinks, etc., must be avoided. Oral sepsis must be cleaned up—oral cleanliness insisted upon—dental irritations must be removed. If the patient is syphilitic he should have adequate antisyphilitic treatment. Heavily filtered radium is useful in stubborn lesions. Electrosurgery or extensive plastic surgery may be necessary. Small patches can be destroyed by electrodesiccation. Any other lesion in the mouth should receive attention and all sources of dental infection or mechanical irritation should be removed.

LUPUS ERYTHEMATOSIS

Squamous-cell epithelioma develops in about 4 per cent of cases of lupus erythematosis. This is a disease of early adult life, more frequent in women than in men, although malignant changes are said to be three times more frequent in men. It may be disseminated or discoid. The latter being more chronic is more liable to malignant changes. The discoid type occurs most often on the face, scalp, and ears. The lesion is variously shaped and sharply marginated and covered with an adherent scale; atrophy and sclerosis follow the chronic lesion which results in slowly developing malignant characteristics. Later when the neoplasm extends into normal tissue its growth is rapid and widespread metastasis occurs promptly.

Any nodule, warty vegetation or ulcer occurring in a sclerotic or atrophic area of lupus erythematosis should be promptly excised or destroyed by electrosurgery, the entire wound thoroughly desiccated and allowed to heal. Retarded healing of the wound may be greatly hastened and cicatrix lessened by the use of flaxseed meal poultices applied constantly and changed twice daily.

Radiation should be highly filtered and applied thoroughly. Some authorities believe that radiation is contraindicated except in those cases of proved widespread malignancy.

NEVI

There is a wide variety of congenital lesions of the skin due to abnormal development of blood vessels in the skin. The flat capillary nevi (port wine stain), the elevated red or purple growths composed of bunches of capillaries (the strawberry mark), the rounded red or bluish-red nevus or cavernous angioma, and telangiectases rarely become malignant but often require treatment because of disfigurement. Most of these lesions are present at birth or appear shortly afterward. Some remain stationary while others, particularly those of the cavernous type, tend to enlarge with considerable rapidity.

Surgical treatment is extremely difficult and unsatisfactory because most of the patients are infants. Electrodesiccation, coagulation or excision usually results in extensive scarring. Carbon dioxide snow produces slow healing, painful ulcers which scar badly. Carefully applied radium at proper intervals over a period of months or years gives the most satisfactory results. X-rays are impractical as it is difficult to get these little patients to hold still long enough.

The most dangeous type of birthmark is the blue-black mole. The surface is usually smooth and may be of a greyish or gunmetal color. Such lesions may remain inactive for many years. However, if they are submitted to frequent trauma or constant irritation, vicious malignant changes may occur. Widespread metastasis may take place before appreciable changes are noticed in the primary lesion. Some authorities believe that most of these lesions are melanomas and that all should be treated as such. Physicians should be very careful in any attempt at treatment. Excision and plastic repair should be done only by an experienced surgeon. The incision should slant outward from the margins and a large amount of subcutaneous tissue be removed down to muscle or fascia. The base of the excised mass should be larger than the skin surface. Microscopic study of excised tissue should always be done. If the tumor is malignant, heavily filtered high voltage radiation should be instituted promptly. Not less than 200 Kv should be used and filter equivalent to 2.0 mm. Cu. The field should extend at least five inches from the center of the primary lesion. From 2000 to 3000 r should be given over a period of several weeks. The discussion of melanomas will not be attempted in this paper because the lesion is frankly malignant.

SEBACEOUS CYSTS

According to recent statistics, from 6 to 9 per cent of sebaceous cysts show malignant changes, usually of the squamous-cell type. The larger cysts occur on the scalp, the back of the neck, and the back. Simple excision with complete removal of the sac is usually all that is necessary in treatment. The removed tissue should always be submitted for microscopic study. If malignant changes have occurred, adequate radiation must be applied.

Other lesions such as ulcers, scars from burns, fistulas, syphilitic lesions of the mucous membranes, lupus vulgaris, kraurosis vulvae, and certain other rare skin diseases are also known to have become malignant. Any of these conditions should be eradicated as quickly as possible.

The general practitioner is guilty of failing to take specimens for biopsy as frequently as he should. Advanced malignant degeneration probably does not require this procedure to make a diagnosis, but other lesions may have early changes which can be detected upon microscopic study which have not yet produced visible gross changes. Properly taken specimens and careful study by an experienced pathologist are essential in order that the patient have complete protection. In cases where malignant changes have occurred, biopsy furnishes much valuable data as to type, grade of malignancy (Broders') invasiveness, and prognosis, and indicates the best type of treatment.

TREATMENT IN GENERAL

In considering surgical methods in the treatment of precancerous lesions of the skin it must be strongly emphasized that a knowledge of surgical principles and training in the technique of minor surgery is absolutely essential to those physicians who expect to be successful in the treatment of these conditions. Electrosurgery, electrodesiccation and electrocoagulation are all surgical procedures and under no circumstances should they be attempted without

suitable anesthesia. Failures and often disastrous results follow attempts to remove these lesions without anesthesia. Incomplete removal, unnecessary pain and suffering for the patient, and the too frequent rapid widespread metastasis result from such practice.

Certain precancerous lesions may well be excised completely with a scalpel. This is especially true of small lesions where a biopsy is indicated, especially when so situated that a scar is of no consequence. One must consider their type and size, depth and location, the possibility of invasiveness or metastasis, the possibility of *complete* removal, and the relative effectiveness of excision as compared with other methods. Disfiguring scars frequently result for reasons beyond control of the surgeon. Infection, development of a wide atrophic scar or keloid formation are results which must be kept in mind. The use of high frequency currents in the removal or destruction of precancerous lesions is a practice which should not be regarded lightly. Tissue removed by this method is of no value for biopsy. Improper care of the lesion after treatment often results in disfiguring scars. Electrosurgery has its advantages in that it may often be used where scalpel surgery would be much more difficult, impractical or even impossible. If properly done, the danger of metastasis is probably less. Less exacting aseptic technique is necessary for the reason that the heat generated is sufficient to sterilize the wound. This factor often causes a doctor to be careless in the preparation of the field for surgery and infection from the surrounding area is sure to follow.

Electrodesiccation is done with a high voltage, low amperage current, usually unipolar, to dehydrate or numbify the surface of superficial lesions or wounds. Electrocoagulation is done with a lower voltage and higher amperage, always bipolar, to coagulate tissue; the blanched, whitened tissue may be curetted away or allowed to slough off. In either case, blood vessels and lymph channels in the affected field are sealed off. The cutting current is a very high frequency, high voltage, low amperage current, always bipolar, known as the electric scalpel, radioknife or endotherm knife and used to sever tissues like any scalpel. Small blood vessels and lymph channels are sealed. Actual cautery is of use in many conditions but it is not as popular now as formerly, having been displaced by electrical methods. Carbon dioxide snow also is useful in some conditions but is being displaced by electrical methods. The after pain following its use is objectionable.

X-rays have a most valuable place in the treatment of precancerous lesions. Probably no other method is capable of doing so much good and at the same time probably no other method is so little understood by the general practitioner and because of this lack of understanding probably no other method has been the cause of more serious after-effects due both to underdosage and overdose than superficial x-ray therapy. Most of this work is done with diagnostic equipment by men who have had little or no training in x-ray therapy. The frequent use of x-rays for diagnostic purposes makes the doctor too sure of himself. When he bought the equipment, the salesman told him he could do superficial therapy with it. So too often all that the doctor thinks he needs in addition to his x-ray machine is a patient. No doctor should attempt any sort of x-ray therapy whatever until he has had his equipment calibrated for x-ray output both as to quantity and quality of radiation. Quantity of output, or intensity, is designated in roentgens per minute in air (r/m in air) or roentgens per minute with backscatter (r/m with B.S.) or (tissue roentgens/m) quality is designated by half value layer (H.V.L.) in Al or Cu. Calibration should be done at regular intervals of not less than six months and always if there has been any change in tube, transformer or conducting equipment. Careful, accurate records should be kept of all factors including voltage, milliamperage, distance, filter, time and field size, as well as the dosage in r, intensity and quality. Any doctor who attempts therapy without proper calibration and without using meticulous care in his dosage is just as guilty of malpractice as a doctor who would attempt to compound a prescription without the use of scales, graduates, or other methods of accurate measurement. It is not good practice to attempt extensive superficial x-ray therapy with a self-rectified unit. Nor is it good practice to use a good diagnostic tube for therapy. The doctor who treats precancerous lesions is often tempted to treat malignant lesions. This may be done successfully by an experienced operator. Bad results in this field are more often due to underdosage than to any other one thing. Probably because of lack of adequate filters, the doctor fears a surface reaction. A deep understanding of the relative sensitivity of tissues and cells to radiation is necessary to successfully treat malignant lesions with x-rays. Three hundred r (measured in air) is considered a threshold erythema dose of unfiltered radiation, 450 r if filtered with 0.25 mm. Cu. or 6.0 mm. Al. The T.E.D. value increases with heavier filtration. Some lesions require from three to ten T.E.D. which is usually given in fractionated doses over a period of several days or weeks. Very few operators use the single massive dose. A few use the saturation method recommended by Pfahler.

No doctor should attempt even superficial x-ray therapy without having had adequate clinical training and instruction. No doctor should ever attempt x-ray therapy without special provisions to protect the patient from stray radiation and from high voltage electrical currents, as well as protecting himself from scattered radiation. No doctor should begin treating patients, even after special training, until he informs the carrier of his professional liability insurance and has proper coverage.

Few osteopathic physicians possess radium or are able to procure it at present; however, radium has many distinct advantages in the treatment of precancerous lesions. Flat glazed half-strength plaques are the most convenient for this purpose. For very superficial lesions the unscreened plaque may be applied directly for from 5 to 20 minutes. Some alpha rays are utilized and all of the betas and gammas. Lesions more than 1 or 2 mm. thick should be treated by screening the plaques with 0.5 or 1.0 mm. Al and applying for from 30 minutes to 1 hour. In treating lesions smaller than the plaque, it is customary to shield the surrounding skin with lead of at least 1.25 mm. thickness. Packs of radium in tubes or needles are also useful. Platinum tubes require no additional screening, but needles of monel (this is an alloy of nickel, iron, etc.) or platinum may require some additional screening. Distance is obtained by interposing blocks of wax, cork, balsa wood or saddle felt. One mg. radium filtered with 1.0 mm. Pb, 2.0 mm. Brass, or 0.5 mm. Pt at 1.0 cm. distance, gives 0.1 r/m. One hundred mgs. at 1.0 cm. distance would deliver 600 r/hour. Most skin will tolerate 6,000 r of gamma radiation which is equivalent to x-rays produced at 1,000 to 2,000 Kv. Radon in tubes arranged in packs with proper filtration may also be used. Its rapid decay makes accurate dosage more difficult to calculate.

The successful treatment of any of these precancerous lesions calls for accurate diagnosis, careful and skillful application of the method best suited to the condition and a thorough understanding of the principles involved whether the method be surgical, electrical or by radiation. Doctors should perfect themselves in these methods and encourage patients to have precancerous lesions properly treated before the danger of malignant changes occur. Proper handling of precancerous lesions removes the most frequent cause of skin and oral cancer.

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Surgical Section

HAND INFECTIONS*

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The hand is more subject to injury than any other part of the body. Furthermore, because of its complicated structure, infections of the hand may result in permanent crippling and impairment, or even complete loss of function.

In any discussion of disease, the first consideration should be prophylaxis. With acute infections of the hand, however, in many instances, the physician, unfortunately is not consulted until the infection is well established and then his duty is one of diagnosis and treatment. However, there are occasions when he may give warning and advice on how to avoid some of the hand infections and the frequent dissemination of such knowledge should be encouraged whenever possible.

The public, in general, is aware of the danger of tetanus from puncture wounds with rusty nails, but it does not know about the serious consequences of the transmission of a mouth infection from lacerations of the knuckles and tendon sheaths produced by a tooth, which often occurs in a fight. Another especially important hand injury is the small puncture wound from a contaminated safety pin used to hold diapers in place. Some day, the danger of this badge of infancy will be realized and it will be replaced by a safer method to the benefit of mothers and nurses.

Every wound should receive treatment at the earliest possible moment and, if potentially infected, should be left open and crust formation prevented by wet dressings or suitable ointment.

Hangnails should not be pulled off, but rather cut short and sealed with collodion or, if deep enough to cause bleeding or serous exudate, should not be sealed over, but should be kept moist. A sterile finger cot, not too tight, is an excellent means of accomplishing this. In many cases of small wounds infections can be prevented by this means, if applied for twelve to twenty-four hours.

Every patient with disturbances of sensation, such as result from nerve injuries and sensory paralysis, should be warned against the dangers of heat and cold and injuries. Individuals with diabetes, nephritis and poor circulation should be warned against the dangers of cutting calluses, hangnails, etc. These individuals, at the first sign of injury or infection, should consult a physician immediately.

After infection has occurred, the principles of treatment are four in number:

(1) Provide adequate drainage at the proper time.
(2) Improve the resistance of the patient.
(3) Prevent deformity.
(4) Restore function.

Before discussing these principles, a brief consideration of the anatomy of the hand as it relates to infection should be in order.

Detailed descriptions of the anatomy of the hand and special infections cannot be covered in a brief article of this type. For such descriptions with illustrations, one may refer to standard works on this subject, such as Kanaval's original "Monograph on Hand Infections" or the section devoted to hand infections in "Nelson's Loose-Leaf Surgery."

The anatomy of the terminal phalanx is such that infection is confined to it for some time except in cases of lymphangitis. The flexor tendon sheaths of the first, second and third fingers extend only a finger's breadth into the palm, and infection of them will be arrested at this point, unless too long neglected when, of course, rupture of the tendon sheath will occur. Usually, however, the tendon has been damaged hopelessly by the time this occurs.

Flexor tendon sheaths of the thumb and little finger communicate with the radial and ulnar bursae respectively and, at times, the radial and ulnar bursae communicate with each other.

In the palm of the hand in front of the metacarpal bones and the interosseous muscles, but beneath the flexor tendons lie the two roughly triangular shaped fascial spaces—the thenar space on the radial side of the third metacarpal bone and the mid-palmar space adjacent to it on the ulnar side of the third metacarpal bone. These spaces, like tendon sheaths, confine and prevent the spread of infection temporarily but, if neglected too long, will rupture. When spontaneous rupture occurs, the infection follows the lines of least resistance along muscle sheaths beneath the annular ligament to the forearm.

On the dorsum of the hand there are no fascial spaces but the tendon sheaths of all extensor tendons are independent of each other and terminate at the wrist and do not communicate. Infections of the dorsal surface of the hand are usually confined to (1) lymphangitis, (2) skin and subcutaneous infection and (3) tendon sheath infection. By a large margin, the volar or palmar surface is the side most frequently involved. It is well worth bearing in mind that severe infection on the palmar surface frequently produces considerable swelling on the dorsum also, though the infection is confined to the palmar side.

We will confine our remarks to the common types of hand infections. There are four chief varieties of hand infections, viz., (1) lymphangitis, (2) skin and subcutaneous infections, (3) fascial space infections (thenar space and mid-palmar space), and (4) infection of the tendon sheaths.

Lymphangitis is easily recognized by both the public and the profession. It is characterized by red streaks extending from the point of infection along the course of the lymphatics to the regional lymph nodes in the axillae. The infection is nearly always streptococcic in character and usually of the hemolytic type.

The diagnosis is obvious when the superficial lymph channels are involved but we must keep in mind that when the deep lymph vessels are the ones affected, the tell-tale red streaks may be absent and enlargement of the regional lymph nodes with perhaps diffuse swelling and slight tenderness along the course of the deep lymph vessels is the only evidence discernible. Early recognition and immediate institution of proper treatment is imperative. The treatment is simple but it is as important to know what not to do as it is to know what to do.

Absolute rest and elevation of the affected limb, completely but loosely wrapped in continuous warm, wet sterile gauze dressings from the finger tips to the axillae is important. No incision or other treatment locally is permitted unless there is a definite demonstrable accumulation of pus, in which case free drainage should be instituted. The acute lymphangitis usually subsides in twelve to forty-eight hours, if this treatment is instituted early. Occasionally, adjacent lymph nodes may abscess and need to be drained. In some neglected cases, or in some that have been treated adequately but in which the resistance is low and the infection virulent, septicemia may develop. A very important rule is not to incise or other-

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wise traumatize except where there is definite evidence of abscess formation.

Cutaneous and subcutaneous infections, most common of which is the paronychia (the name applied to a pyogenic infection lateral to the fingernail), usually occur following a hangnail but may result from any puncture wound of this region. In early cases it is limited to one side. In neglected cases, it may extend around the base of the nail and then is properly called a "run around."

In the early stages, if the infection is very superficial, the treatment consists of wet dressings which often will suffice to establish drainage. If this is not effective in twelve hours, an incision should be made and wet dressings continued. In the advanced case, with involvement of the nail base, bilateral incision and gently lifting and excising the proximal portion of the nail which has already separated from its matrix, will establish drainage. In the absence of complications prompt recovery will follow. Care must be taken that the incisions do not injure the nail matrix or the joint, else a permanently deformed nail will result in the first instance and an osteomyelitis or pyoarthritis of the joint may develop in the second.

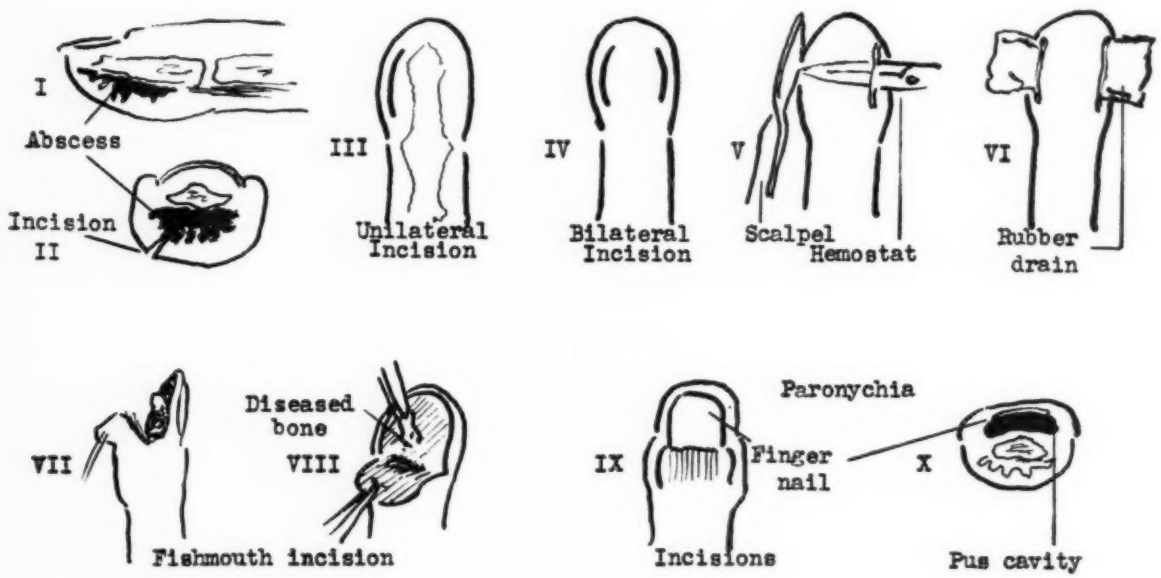
Infections of the volar surface of the terminal phalanx should be incised on the lateral aspect of the finger in front of the bone. Counter incision can be made on the opposite side in severe abscesses. If a bone felon is present, thus requiring exposure of the bone, these incisions may be united over the tip of the finger and the necrotic bone can be removed. Such incisions establish better drainage, heal quicker and result in a less disturbing scar than an incision located anywhere else on the finger tip.

Tendon sheath infections usually result from puncture wounds or lacerations which have penetrated the sheath. The accompanying illustrations explain better than words the best sites for incisions to open the various tendon sheaths.

Such infections are often undiagnosed until late because the infection is confined to the sheath and the finger as a whole may not be markedly swollen. A few simple procedures will enable one to diagnose early a tendon sheath infection. If slight attempt at active or passive motion of the involved tendon markedly aggravates the pain, and if the maximum tenderness is confined to the course of the tendon sheath, there probably is an infection of it. Of course, there is accompanying systemic evidence of infection also.

Web-space infections are self-evident from the tenderness and ballooning of the web between the fingers. They develop from puncture wounds in this region or secondary to neglected adjacent tendon sheath infections that have ruptured. The chief question of diagnostic importance is the extent of the infection and the location of the pus. Infection of the palmar or thenar space may extend along a lumbricale muscle to point in the web, or an infection of the web may extend along the lumbricale muscle to involve the fascial space. Treatment is operative drainage through a palmar incision midway between the fingers but distal to the flexion creases in the palm. If either the thenar or palmar space also is distended with pus, the connecting channel can be found and enlarged by a hemostat through the incision that is only skin deep.

The mid-palmar and thenar spaces may be infected through a puncture wound, by extension from distal tendon sheath or web-space infection, and occasionally



Figs. I and II illustrate infection limited to the anterior region of the terminal phalanx.

Fig. II is a cross section showing location of incision in relation to abscess.

Figs. III and IV are anterior views showing unilateral and bilateral incisions. Incisions should not be made over the palmar surface because the resultant scar tissue may interfere with tactile function of the finger, but chiefly to establish better drainage of the abscess.

Fig. V illustrates the insertion of a small pointed hemostat in front of the phalanx in the first incision and held in position while an incision is made through the skin on the opposite side.

Fig. VI shows rubber drain in place to permit through and through drainage.

Fig. VII. The fishmouth incision, though rarely necessary, gives the most complete drainage. It is useful in infections involving the bone phalanx. Care should be taken not to extend the incision too low because of the danger of carrying infection to the tendon sheath or joint.

Fig. VIII illustrates curettment of diseased portion of the bone in cases of osteomyelitis.

Fig. IX shows incisions for drainage of chronic infection around the base of a finger nail with pus beneath the matrix (Fig. X).

Drawings by Georgia Hikade. Modified from Cutler and Zollinger: "Atlas of Surgical Operations." The MacMillan Company, publishers.

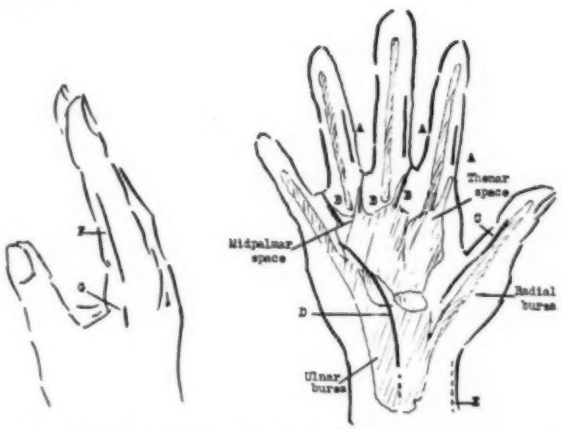


Fig. XI illustrates the locations of incisions for drainage of infections of tendon sheaths and palmar spaces.

Incisions A are used along the inner sides of the fingers to open tendon sheaths when infected. These incisions are not permitted to extend across the joint space.

Incisions B between the webs of the fingers are necessary if the infection has spread into the lumbrical space. If the midpalmar space is involved the web incisions are extended downward.

Incision C is for tendon sheath infections involving the thumb.

Incision D is for drainage of the ulnar bursa. It is made over the region of tenderness on the radial side of the hypothenar eminence and is extended down to the transverse carpal ligament. If the infection has spread to the major forearm space, incision is made along the flexor surface of the ulna and an incision E over the radius on the opposite side to permit drainage from either side.

Incision F is used in tenosynovitis of the index finger when the infection may have extended over the radial side. If it extends through the outer lumbrical space into the thenar space, an incision G is necessary.

by lymphatic extension. If early drainage is not instituted, infection may spread from one space to another and up into the forearm.

The diagnosis of thenar or palmar space abscesses is made by the location of the throbbing pain and extreme tenderness on pressure accompanied by the other signs of acute inflammation. There may be pronounced swelling on the dorsum of the hand but it is without induration or points of tenderness. Mid-palmar abscess may have but little swelling in the palm due to the strong palmar fascia but considerable on the back of the hand; the pain, however, is on the volar surface. Thenar space abscesses are likely to produce marked swelling of the web between the thumb and index finger. The treatment is adequate surgical drainage.

The palmar space is opened between either the third and fourth, or the fourth and fifth fingers, depending upon which area is swollen more. Where there is a choice, the space between the fourth and fifth fingers should be avoided as there is a risk of opening the ulnar bursa. The incision is made through the skin in the distal part of the palm and then the abscess is opened with forceps so as to avoid injury to the tendon sheaths, blood vessels and nerves to the fingers.

The thenar space is usually opened on the dorsum of the web between the thumb and first finger but anterior to the metacarpal bone. A clamp is then inserted along the palmar surface of the adductor pollicis muscle, into the thenar space.

Tendon sheath infections of the flexor tendons of either thumb or little finger quickly travel to the wrist and above it. Frequently an infection of the flexor tendon sheath, for instance in the thumb, will involve the little finger and visa versa, because of the proximity of the ulnar and radial bursae with which they communicate. Infections of either the ulnar or the radial bursa will more quickly travel to the forearm than will infection of the other flexor tendon sheaths because of their anatomical arrangement. The accompanying figures illustrate the proper sites for incisions to drain these structures.

SUMMARY

An attempt has been made (1) to review briefly the anatomy of the hand, (2) to outline the clinical aspects of hand infections, and (3) to suggest the most favorable sites for draining the various types of hand infections.

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TREATMENT OF BURNS*

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The question of the care of burns has been discussed extensively in the literature for a good many years, but as yet no perfect answer has been reached as indicated by the great variance in methods of treatment found even today. There are over two hundred different ideas of treatment. This situation prevails because of the fundamental nature of the problem. We can not expect the burned tissues to return to their original state, yet we are dissatisfied with our present means of treatment and are constantly casting about for something which will result in more perfect replacement of the injured tissues. We hope that an ideal method some day will be discovered because, at the present time, there is none. However, modern methods are much better than older ones, especially since Davidson clarified the picture somewhat by his work with tannic acid in 1925.

There is some controversy about the causes of toxicity following a burn. There are those who claim that an infection occurs, resulting in toxemia. Others say that a specific toxin is liberated at the site of the burn. One thing is certain, that a physical loss of fluids and plasma protein occurs which causes a concentration of blood elements and may even produce circulatory failure. Due to this concentration of blood elements, tissue anoxia develops, aggravating the toxicity.

Even though we do not know the specific cause of the toxicity, we do know that it occurs, as does dehydration, and that they must be combated. It is important to remember that the depth of the burn is not the only index of the amount of toxemia. Superficial burns, and even sunburn, may produce marked toxemia if sufficiently extensive.

This brings us to discussion of the pathology of burns. We will consider it from both the local and the systemic aspects.

PATHOLOGY

Local Pathology.—This probably is described best by means of Dupuytren's classification or some modification of it.

First degree burns produced erythema; second degree, vesicles; third degree, destruction of some layers of the skin; fourth degree, destruction of all skin layers; fifth degree, destruction of muscle; and sixth degree, destruction of bone. Fourth, fifth, and sixth degree burns are sometimes referred to loosely as third degree burns.

In estimating areas of burned surface of the body, we may use the following figures: The entire surface of both lower extremities comprises 38 per cent of the total body surface; the trunk and neck, 38 per cent; the upper extremities, 18 per cent; and the head, 6 per cent.

It is generally agreed that a burn involving 50 per cent or more of the body surface is incompatible with life, even though it be only a superficial burn. In deeper burns the same is true if one-third or even less of the body surface is involved. Both of these statements depend a great deal upon the age of the patient, his psychological makeup, and his general level of health.

Systemic Pathology.—This depends directly upon the extent of the burn and the patient's health at the time the

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burn occurs. There may be no systemic manifestations whatsoever with small burns. As the size of the burn increases, so does the severity of the systemic disturbance.

Clinically we know that a large part of the systemic condition is the result of dehydration and some form of toxemia. Thus, the early reactions to a burn are found in the blood stream, and the late reactions in the viscera.

TREATMENT OF VARIOUS BURNS

In first degree burns, a mild sunburn in a small area for example, the burned area requires little care. Anesthetic ointments, such as Nupercainal, Butesin Picrate, and Purnatol, are simple to use and are very effective in relieving the pain produced by a small burn.

If the area is greater, the patient should be placed at bed rest, and the same ointments may be used locally. Mild sedatives or hypnotics may be necessary and the patient should be encouraged to drink plenty of fluids.

In second and third degree burns prompt local treatment is important, but the patient's suffering must be relieved as soon as possible. To do this, anodynes, such as morphine and its derivatives, should be given if the patient is not in too severe a state of shock. This should be done while preparations for local treatment are being made.

If the involved area has not been contaminated by dirt or improper treatment, it can be considered as a sterile surgical wound because the agent producing the burn will have produced a sterile field. If the wound has been contaminated, it should be cleansed with sterile physiological saline solution, using surgical technique. If the contaminating material cannot be removed by saline solution, it should be removed mechanically by aseptic methods. Whenever there is any possibility of ground contamination, tetanus antitoxin should be given.

If vesicles are still present, it is best to maintain them intact, if possible, but if they are so large that spontaneous rupture will occur soon, or if they are in such a location that they will rupture easily, they should be opened aseptically.

After cleansing and proper attention to vesicles, the area is ready for further treatment. We recommend some form of tannic acid. For the smaller burns one of the tannic acid jellies is best. For larger areas we advise a 5 per cent freshly prepared aqueous solution of tannic acid, used either as a spray with an atomizer or a commercial sprayer, or painted on with a camel's-hair brush. This solution can be made rapidly by dissolving the powder in water, using 1 dram of the powder to 4 ounces of water. Some physicians add 10 per cent silver nitrate solution to the tannic acid. The silver nitrate tends to be somewhat antiseptic and it also keeps the crust that forms a little softer. These solutions should be applied every 10 to 15 minutes until a tan coagulum forms. Then they should be applied every hour until a thick crust is developed. This may take 6 to 12 hours. The solutions may also be applied by covering the area with sterile gauze and keeping the gauze saturated. Some authorities advocate bandaging all burns, but this procedure is not generally used. In an emergency strong tea may be used in a similar manner until tannic acid is obtained.

These patients must be kept at absolute bed rest on sterile sheets in a warm or superheated room. The bed clothing should be kept elevated from the injured tissues by means of a "cradle" and electric light bulbs may be placed at the peak of the "cradle" to maintain the temperature.

The pain caused by extensive burns must be controlled by means of morphine, dilaudid, pantopon, et cetera. These must necessarily be given frequently so the patient must be watched carefully for signs of overdosage. The drug should be discontinued as soon as possible to prevent the development of the drug habit.

Probably the next most important phase in the care of this type of case is the maintenance of the fluid balance. In an adult there should be at least a 1500 cc. output of urine in a 24 hour period. However, one must watch for signs of dehydration or hydremia, such as dryness of the mucous membranes and skin, or, on the other hand, development of edema. The urine specific gravity is a useful index and the red blood cell count is also helpful in this regard. If the patient can take adequate fluid by mouth, the problem is solved; if not, intravenous glucose and saline solutions must be given. One thousand cubic centimeters of 5 per cent glucose solution given slowly is a fair single dose in the average case. If the patient has a lot of exudation or has been vomiting, the 5 per cent glucose should be given in physiological saline to help replace the chlorides lost. One must be sure that sufficient fluid is given to overcome the dehydration completely. In cases requiring intravenous administration it is sometimes necessary to give as much as 5000 cc. in a single day.

As the days pass, the patient should be watched carefully for signs of complications, such as infection. Local tenderness, pain and swelling, and constitutional signs of infection, such as increased pulse rate, fever, and malaise, should be looked for. Infections may develop under the crust. In such a case the crust must be softened at that point with sterile water or 10 per cent silver nitrate solution and an opening made to allow for drainage. Local moist applications may be necessary. Occasionally a true abscess may develop, requiring incision and drainage after fluctuation has occurred.

As healing of the burned area progresses, the crust tends to separate spontaneously. It should be retained in place as long as possible, but usually can be removed at least partially after 7 to 10 days.

Fourth, fifth, and sixth degree burns are, of course, proportionately more serious. The care of the local area is essentially the same as in second and third degree burns, but the age, vitality, and state of shock of the patient must be evaluated more carefully.

In general, one should direct his attention, first, to the care of the burned area, after relieving the patient's pain by morphine. Here, again, the lesion is treated as a sterile wound unless contaminated by products of improper treatment or debris. Debris and charred material should be removed. If the part is too badly burned or if toxic absorption from necrotic tissue is too great, amputation may be necessary.

After the area has been prepared, as described, tannic acid therapy should be instituted.

The general care of the patient requires closer supervision than in less severe burns. The patient's general health level must be evaluated because this factor will modify the systemic treatment. If the individual is aged or has kidney disease or diabetes, et cetera, his care will have to include special attention. The degree of shock is usually greater than in mild burns. Early, the shock may be due to pain. If so, it responds to the use of morphine. However, in severe burns shock may be due largely to tissue destruction. Only enough morphine should be given to overcome the pain and other measures should be used to overcome the shock, such as the use of oxygen, external heat, intravenous glucose, et cetera.

Daily urinalyses are made and fluid intake and output charts kept to evaluate the fluid balance. In these cases seven to eight thousand cubic centimeters fluid intake may be required to produce the 1500 cc. output; thus the use of intravenous fluids is much more necessary.

Serum protein determinations are valuable in critical cases and non-protein nitrogen and blood chloride and sulphate determinations should be obtained if the urinary output is scanty or if there is other evidence of kidney damage. Blood cultures should be made if evidence of sepsis appears.

The possibilities of scar formation and contractures are to be considered. Their extent and character are, to

some extent, a matter of chance dependent upon the location of the burn, but suitable splinting and positioning of the part help to minimize the danger of contractures. Unfortunately, various types of plastic operations may be necessary in an attempt to overcome deformities. These are done at a later date after healing has occurred and are directed toward overcoming any disability.

Similarly, skin grafting is sometimes necessary to cover defects. The type of graft used depends upon the location and extent of the granulating area to be covered. This work is done as soon as healthy granulations appear and infection has been eliminated. Skin grafting minimizes the frequency and extent of the later plastic operations.

A few words should be said about some special types of burns. A frequent cause of a localized deep burn is electricity. Here a dehydration or mummification of the area occurs. Treatment is a little different and simpler because of the slight systemic effect. There is little toxic absorption from the burned area because of the desiccation of the tissues. The surface should be cleansed with soap and water and alcohol compresses should be placed over the area of coagulation. As time goes on the "core" tends to "curl up." This crust is carefully removed and Azo-chloramide or Chloramine T in olive oil is applied. This process is repeated until the base of the ulcer is reached. Skin grafting or plastic work may be necessary if the burn is extensive.

In burns due to bases and acids, one should dilute or wash away the agent rather than neutralize it and treat the area as a thermal burn. In the case of phenol burns, one should dilute and wash away the phenol with alcohol, not water, and treat the area as a thermal burn.

It is impossible to discuss the care of burns completely in a brief consideration such as this paper. Consequently, we have not attempted to give a cross section of the many different methods of treatment in existence today.

Rather, our aim has been to give a logical method of procedure in using agents that have proved to be effective.

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Current Medical Literature

Abstracted by R. E. Duffell, D.O.

Local Treatment of Burns

In an editorial in the February 1 issue of *Surgery, Gynecology and Obstetrics,* Michael L. Mason, M.D., pleads for early closure of a burned area following careful cleansing with soap and water and liberal flushings with normal salt solution. He believes that burns should be considered as open wounds and the strictest aseptic technique used in caring for them in order to avoid infection. Caps and masks should be worn by everyone who takes part in the cleansing or who comes into the room during the process. Hands should be scrubbed and covered with sterile rubber gloves; instruments and dressings should be sterile. As for the coverings they must be nonirritant and adequately protect the surface and prevent fluid loss from it. Mason says that "a large pressure dressing similar to that applied over skin grafts seems to be advantageous in that it helps to immobilize the part and minimizes the loss of fluids into the tissues about the burn."

In discussing tannic acid treatment he says: "If we can get the raw surface quickly covered with a tannic crust and not expose the wound for too long a time while doing so and keep the crust from cracking or constricting or traumatizing the skin at its borders, we will have a satisfactory dressing."

Dr. Harvey S. Allen, in a personal communication to Mason, says: "In the children's wards at Cook County Hospital in Chicago, the mortality rate from burns has been reduced from 10 per cent to 3.9 per cent by a method of treatment such as that which is outlined here: Careful soap and water cleansing, and a pressure dressing over vaseline gauze."

Dressings subsequent to the one applied following the initial care should be reduced to a minimum in number and should be carried out with strict aseptic technique.

Anal Lesions a Factor in the Etiology of Vascular Hypertension

Writing in *The Journal of the American Institute of Homeopathy* for June, 1941, Eugene Carmichael, M.D., makes especial mention of the importance of the fifth thoracic spinal segment in diagnosing buried fissure. He says: "Nerves from this segment have an influence over blood pressure through the various groups of vasomotors in which they are included . . . The splanchnic group includes the *fifth* thoracic and supplies the kidneys and this fact ties in with the influence of buried fissure in renal vasoconstriction, renal ischemia and the production of a 'pressor' substance which causes vascular hypertension."

The author discusses what he calls "two schools of thought relative to hypertension." One is that hypertension is caused by chemical (pressor or effective) substances generated by the kidneys and circulating in the blood, causing vasoconstriction either by direct action on the muscular walls of the vessels or through the vasomotor nerves. The other "school of thought" is that hypertension is caused by excessive nonrenal stimulation of the sympathetic vasoconstrictors and through them contraction of the circular muscles of the arteriolar system. These stimuli are said to be psychic or emotional, work that is constant or prolonged bacterial toxins, arteriosclerosis, or other nonrenal structural lesions. He says that in the majority of cases, both theories may likely be included in the etiology of hypertension, these causative factors being secondary to hereditary tendency toward hypertension.

The writer has reduced high blood pressure to normal in a number of cases by treatment of so-called buried fissure, a site of postanal pathology, and small irritable hemorrhoids. The reduction in these cases was an unlooked-for result of the treatment, which was given for relief of other reflex symptoms.

Carmichael gives the following experimental test to show the connection of buried fissure and the fifth thoracic spinal segment with high blood pressure:

"First, take the patient's blood pressure and leave the arm band in place. Next make firm pressure for about three minutes on the spinous process of the tender fifth dorsal vertebra. This will be found to be slightly misplaced forward and more tender than those above and below it. Now, again take a reading of the blood pressure which probably will have been reduced 10 to 40 points. In some cases it may be necessary to make firm pressure on the third cervical spinous process if it is found to be tender . . . This test shows two things: namely, that hypertension always occurs through the vasomotors and buried fissure is involved in hypertension, even in cases in which the renal factor is predominant."

MORE GENERAL PRACTITIONERS NEEDED

The answer to the question "Is the general practitioner doomed?" is "No," and that to the query "Is the profession overspecialized?" is "Yes." It is true that only 25 per cent of the recent graduates of M.D. schools intend to do general practice, that the number of general practitioners has been steadily growing less, and that the average age of those left is increasing. However, as a well-trained general practitioner can and does successfully treat over 80 per cent of disease, and as his volume enables him to treat his patients at a lower cost, the public needs and wants more general practitioners.—Wilburt C. Davison, M.D., "Opportunities in the Practice of Medicine," *The Diplomate,* April, 1941.

PRESIDENT'S ACCEPTANCE ADDRESS

Phil R. Russell, D.O.

(Continued from page 486)

3. I feel that Dr. R. C. McCaughan, our Executive Secretary, needs a full time assistant secretary—a doctor—to be at all times in the Central office or that he should be relieved of the contact work so that he himself may stay in the Central office. If you should adopt the second plan, I suggest that we provide a professional relations man to relieve Dr. McCaughan.

4. The time has arrived when we should have larger quarters, and all activities of the Association should be housed together, with the exception of the Public Relations Committee, which, of necessity, must be in Washington. I feel that we should seek quarters out of the high rent district and that additional clerical help should be added to the Central office force.

5. The Public Relations Committee, with Dr. Swope at its head, for many years has served with makeshift facilities, a corner of an office and a limited clerical staff, in spite of which it has rendered a valuable service. If there have been any failures in its program, it has not been the Committee's fault, but the fault of those of us who have failed to take advantage of the opportunities presented. We have criticised—yes, I have criticised—this Committee, but after a trip to Washington and after viewing the magnitude of the work undertaken by the Committee, I realize that it has been impossible for it to do more with the present setup. We must provide the means, for this Committee must function; it is one of the arteries of the profession. I feel that we must place it on a more workable basis, provide suitable quarters, sufficient clerical help, and a full-time doctor adapted to the work, and subject to the jurisdiction of Dr. Swope. In the interest of economy, the membership of the Committee should be reduced to its original quota of three.

6. I urge active support of the Council on Defense and Preparedness, which was set up by the Executive Committee of the A. O. A. in December, 1940, with a threefold purpose: *(a)* preparation of the osteopathic profession for participation in the government preparedness efforts; *(b)* a survey of influential lay contacts; and *(c)* cooperation with the Public Relations Committee to stimulate all efforts toward participation of the profession in national defense and preparedness, and any public health activities connected therewith.

This Council has rendered a valuable service to the profession. It has accomplished much in the short time it has functioned. It should be continued and should serve in connection with the Public Relations Committee, taking over such work as can be assigned to it by the Public Relations Committee. The Council should be authorized to put into force, through its many divisional councils, such social reforms as are pointed out by the Public Relations Committee. I believe the Council should be continued with a membership of six, one man to be appointed to represent each district which has as many as one thousand A. O. A. members.

7. The Division of Public and Professional Welfare has been one of the most enthusiastically received organizations of the A. O. A. It has rendered a valuable service and we have received untold benefits from its activities. It started as an experiment and has proved its value. I believe that the time is now ripe for a check of the mechanics of this division and the evaluation of its service in order that we may work with more efficiency and discover which part of this program is giving us the best returns for the money invested, so that we may divert to proper channels the money spent on efforts that do not show the proper returns. I view with alarm our tendency to place so much of our committee work and the functioning of the A. O. A. under the supervision of the Division of Public and Professional Welfare, and in not placing this division under the jurisdiction of some regular Department of the A. O. A. I recommend that this be done. I do not favor the farming out of this program. I think it should be moved into the Central office and under its jurisdiction, with a salaried public relations man and all of the expenses paid through the Central office. This I recommend in the interest of economy and efficiency. To provide for the maintenance of this program, I should like to see an increase of dues and an end to the practice of soliciting funds.

8. The National Convention needs some overhauling. I believe that the time has arrived when the Bureau of Conventions should take over the running and financing of our National Conventions, using in cooperation with it a local convention committee and allotting to this local committee the necessary money for entertainment. This, I believe, is to the best interest of efficiency and economy, and to the best interest of the profession. I am firmly convinced that the convention should be held where we can secure accommodations for our meetings in hotels. It is better to be crowded into a hotel ballroom than to have the delegation lost in an auditorium constructed to seat ten or fifteen thousand people. Furthermore, there is a conspicuous need for a change in our convention programs. We have too many unattended sections, with too little interest shown in them to justify their continuance. We should concentrate on developing sections that are popular with those in attendance. In regard to the general program, I urge that we spend more time on organization work.

Time does not permit me to go further into the discussion of the departmental heads and committees under them. I have tried to discuss with you some of the reforms which I regard as most necessary. I realize that I have asked much, a large part of which will require appropriations far beyond our present budget, but I am hoping you will recognize the expediency of the investment, that you will provide the personal financial help. I do not expect you to agree with all the ideas I have given you; but if you don't, it is up to you to suggest better ones. No help ever comes from a statement that an idea or program is wrong, unless you can offer a substitute. I earnestly request you to give just a little more thought to your Association, and to realize that it has prospered in accordance with the amount of effort you have expended; that you have prospered not alone because of your efforts, but also because of the valuable service rendered by your organization. If it is to continue to be valuable to you, you must make it so. You *are* the Association.

Suite 602 Floyd Holmes Bldg.

Current Osteopathic Literature

Abstracted by R. E. Duffell, D.O.

CLINICAL OSTEOPATHY
LOS ANGELES
37: No. 5 (May), 1941

Slipped Capital Epiphysis of the Femur. W. W. Jenney, D. O., and Dain L. Tasker, D. O., Los Angeles, Calif.—p. 237.

Osteopathic Technic as Developed in the Department of Manipulative Technic, COPS. Part IX.—p. 248.

A Survey of Therapy in Acne Vulgaris, John E. Cozen, D. O., Los Angeles, Calif.—p. 256.

*A Practical Method of Restoring Maladjusted Persons. (Part II. Conclusion). Thomas J. Meyers, A. B., D. O., F. A. C. N., Los Angeles, Calif.—p. 259.

***A Practical Method of Restoring Maladjusted Persons.**—Part II. Part I (abstracted in the June JOURNAL) described the general plan and methods used in rehabilitating maladjusted and neurotic patients in the Los Angeles County Osteopathic Hospital outpatient clinics. In Part II, Meyers says that the group clinic described in these articles has been in operation for nearly four years, although the methods used were not sufficiently refined to permit statistics until a year age. Of the 139 patients treated by these methods, fourteen were repeat cases and 125 were new. Of the total number, 56 per cent made good social adjustments as a result of the treatment.

Diagnostic criteria were laid down according to the classification in Sadler's "Therory and Practice of Psychiatry," as follows:

Neurasthenia. — The dominant disabling symptom is fatigue; expressed symptoms are obvious nervous derangements of the functioning of some organ or group of organs;

Hypochondriasis.—Some physical symptom or symptoms predominate, unsupported by demonstratable pathema, and attended by emotional rigidity regarding the symptom;

Hysteria.—Emotionalism and suggestibility predominate, regardless of the severity and extent of symptoms, provided reasonable evidence is found to show that the emotionalism is causing the symptoms;

Psychasthenia.—Mental symptoms such as fears, compulsions and major inferiority feelings predominate.

The author presents nine tables which show: Response by groups; response in relation to diagnosis; correlation of response grade with age of patient; correlation of response to duration of illness; correlation of response and attendance at four or more meetings; diagnosis correlation with response of patients attending four or more clinic meetings; response in the first series of group meetings of a group of fourteen patients who were persuaded to repeat the class work; response in the second series of class sessions of this group.

In summary, Meyers says: "From these figures, it is easy to see an interesting and somewhat surprising result. The therapeutic response in the neuroses is influenced not by the length of time the illness has existed, nor by the age of the patient, but by the degree of application on the part of the patient to the efforts toward recovery, their interest in recovery and the diagnosis of the problem present.

"The result is stimulating to an entirely new version of the psychoneuroses. It places the functional nervous state in the field of social adjustive mechanisms and makes the neurosis a social situation. Group clinics seem to greatly shorten the time necessary for recovery and apparently produce much more stable recoveries. A check on some of our earlier cases shows that in most instances results not only are permanent, but tend to become increasingly expressive. Some patients regressed, while others who seemingly had not gained a great deal from the work, showed a surprising growth of adjustive ability."

THE OSTEOPATHIC DIGEST
PHILADELPHIA COLLEGE OF OSTEOPATHY
Vol. 14, No. 3 (April), 1941

Scientific Supplement:

*The Effects on Blood Pressure and Pulse Rate of Sudden Spinal Joint Mobilization of the Entire Spine in a Group of "Normal" College Students. Frederick A. Long, D.O., Philadelphia.—p. 9.

Notes on Certain Factors Causing "Primary Short Leg." Guy S. Deming, A.B., D.O., Philadelphia.—p. 11.

*The Practical Application of Acoustics in the Study of Physical Diagnosis Through the Use of Amplifying and Recording Equipment Developed by Dr. Wilbur P. Lutz and Mr. Charles C. Miller, both of Philadelphia.—p. 13.

***The Effects on Blood Pressure and Pulse Rate of Sudden Spinal Joint Mobilization of the Entire Spine in a Group of "Normal" College Students.**—Since February, 1933, the Department of Osteopathic Research of the Philadelphia College of Osteopathy has been conducting experiments to determine any changes which may occur in systolic and diastolic blood pressures and impulse rate as a result of certain manipulative procedures applied to the spines of college students in whom no gross cardiovascular disease can be detected. Descriptions of the experiments and the results have been published from time to time in *The Osteopathic Digest* and the material abstracted in THE JOURNAL OF THE A.O.A. Previous experiments include: effects on blood pressure and pulse rate of sudden joint mobilization in the cervical and upper thoracic regions;[1] effects of suboccipital pressure on blood pressure and pulse rate;[2] effects of upper thoracic pressure on blood pressure and pulse rate;[3] and effects on blood pressure and pulse rate of sudden spinal joint mobilization in the lower thoracic and lumbar regions.[4]

The present abstract covers experiments carried out during 1940-41 on the effects on blood pressure and pulse rate of sudden spinal joint mobilization *of the entire spine.* The individuals used in the experiment were sixty male students, half of whom acted as controls. One subject and one control were studied at a time. Blood pressure and pulse rate were taken before mobilization, immediately after mobilization, and five minutes after mobilization. The manually applied technic of mobilizing the lumbar, thoracic and cervical regions of the spines of the subjects has been described previously.[1,4] The controls made all movements carried out by the subjects, but no mobilizing forces were applied.

Results of the experiment are described by Long as follows:

"There was a rise in systolic pressure in both subjects and controls immediately following manipulation of the subjects, and this rise is seen to have been essentially the same in both groups. At the five-minute period following manipulation . . . both subjects and controls produced average readings below the original readings, and this drop was slightly greater in the subjects. The results indicate no significant differences in the behavior of the two groups.

"The changes in diastolic pressure . . . indicate a greater difference between subjects and controls than occurred in systolic pressure. The average diastolic pressure in the subject group increased practically not at all immediately following manipulation, while the average in the control group increased 2.9 mm. At the end of five minutes following manipulation the average diastolic level in both groups had dropped to slightly below the original value.

"The changes in pulse rate . . . evidence a progressive fall in rate in the subjects with a final reading giving an average value 1.2 beats per minute below the original reading. In the controls the final reading at the five-minute period is seen to have been above the original reading."

The experiments seem to indicate that in "normal" college students no significant alterations in blood pressure or plus rate occur when the entire spine is subject to sudden spinal joint mobilization.

1. Long, F. A.: The Effects on Blood Pressure and Pulse Rate of Sudden Spinal Joint Mobilization in the Cervical and Upper Thoracic Regions. Osteopathic Digest, 1937 (Oct.) 3:5. Abstracted in Jour. Am. Osteop. Assn., 1937 (Dec.) 37:163.

2. Long, F. A.: The Effects of Suboccipital Pressure on Blood Pressure and Pulse Rate. Osteopathic Digest, 1938 (Feb.) 3:3. Abstracted in Jour. Am. Osteop. Assn., 1938 (May) 37:428.

3. Long, F. A.: The Effects of Upper Thoracic Pressure on Blood Pressure and Pulse Rate. Osteopathic Digest, 1938 (Nov.) 4:11. Abstracted in Jour. Am. Osteop. Assn., 1939 (Jan.) 38:265.

4. Long, F. A.: The Effects on Blood Pressure and Pulse Rate of Sudden Spinal Joint Mobilization in the Lower Thoracic and Lumbar Regions. Osteopathic Digest, 1940 (Jan.) 5:7. Abstracted in Jour. Am. Osteop. Assn., 1940 (Feb.) 39:308.

***The Practical Application of Acoustics in the Study of Physical Diagnosis Through the Use of Amplifying and Recording Equipment Developed by Dr. Wilbur P. Lutz and Mr. Charles C. Miller.**—To aid in the teaching of physical diagnosis at the Philadelphia College of Osteopathy, Wilbur P. Lutz, D.O., Clinical Professor of Osteopathy, working with Mr. Charles C. Miller, chief engineer of one of the largest broadcasting studios in Philadelphia, produced a machine which, through the medium of a special stethoscopic microphone, will transmit directly from the surface of the body not only normal and abnormal sounds emanating from the thorax and its contents, but also any acoustical phenomena produced in the abdomen or other parts of the body; amplify them from a speaker sufficiently loud to be audible throughout an average-size room or a small auditorium; and permanently record them on acetate discs for reproduction. Any student or physician who has average quality electric record-playing equipment can reproduce the sounds.

Other characteristics of the machine are described as follows:

"By means of an oscilloscope, the sounds may be projected and be visible on a cathode-ray tube from which they may be directly studied or copied for future analysis and study. In this way the acoustical phenomena may be both amplified and permanently recorded for study through the medium of sound and sight.

"Using a voice microphone in combination with the above circuit, an interesting and instructive description of the history and physical characteristics of the sounds may be recorded with the sounds themselves or independently.

"The machine is entirely portable, operates on 110 V-60 cycle alternating current and has a level frequency response of from 30 cycles to 10,000 cycles."

This equipment of Lutz and Miller includes the general features of high-priced amplifying machines built commercially, but has the "additional features of being constructed of standard radio parts and of permanently and economically recording and faithfully reproducing any and all normal or abnormal acoustical phenomena audible through the medium of the special technic and ordinary instruments used in the practice of physical diagnosis."

JOURNAL OF OSTEOPATHIC OPHTHALMOLOGY, RHINOLOGY AND OTOLARYNGOLOGY BETHLEHEM, PA.

22: No. 4 (October-November-December), 1940
23: No. 1 (January-February-March), 1941

*Suppurative Otitis Media. Theo. M. Tueckes, D.O., Davenport, Iowa—p. 8.
Chronic Maxillary Sinusitis. J. Russell Morris, Oph.D., D.O., Oakland, Calif.—p. 13.
"Multum in Parvo": Foods, Fads, and Fanatics. T. J. Ruddy, D.O., F.I.S.O., Los Angeles, Calif.—p. 17.
Vertigo. A. B. Crites, M.D., D.O., F.I.S.O., Kansas City, Mo.—p. 25.
Management of Strabismus. C. M. Mayberry, D.O., East Liverpool, Ohio.—p. 34.

***Suppurative Otitis Media.**—Because middle ear infection or its complications is met with so frequently by the eye, ear, nose and throat specialist, Tueckes has discussed at length the treatment for the acute type, and to a less extent, treatment for the chronic type. The disease occurs most frequently during childhood and youth, as a complication of many diseases, including the common cold, influenza, tonsillitis, the acute exanthematous diseases, measles, syphilis, etc. Tueckes mentions improper diet and malnutrition as important factors in the incidence of the disease. Osteopathic lesions, interfering with the normal circulation of the blood to and away from the middle ear, must certainly be considered.

Prophylaxis is said to be the ideal treatment for the disease, although this is often impossible because of the rupture of the drum-head before the aurist is consulted.

Tueckes gives suggestions for anesthetizing the patient before performing myringotomy; antiseptics for maintaining drainage and later clearing up the condition entirely. Osteopathic manipulative treatment is recommended to be used in conjunction with these therapeutic procedures, since "most of these cases have an atlas lesion and usually other lesions in the [cervical and upper thoracic regions of the spine]." The author says: "I believe that all other treatment is adjunctive to the osteopathic treatment."

A check-up is of value, after the ear has stopped draining and the inflammation has subsided, to determine the original source of the infection, and to remove it if possible.

In connection with chronic suppurative otitis media, the author submits that he has known of this condition being cleared up in patients whose ears had drained for longer than five or six weeks. He summarizes a case where there had been ear drainage for three years at one time and two years at another, where a cure was effected.

In summarizing treatment for chronic cases, he says:

"I think the first form of treatment should be conservative. If the opening in the tympanic membrane is small, it should be enlarged immediately to facilitate better drainage. Then if the ear does not respond to treatment in two or three weeks, the more radical procedure of opening up the mastoid should be considered. If left to drain indefinitely, the infective process may extend, by eroding the bone, into the lateral venous sinus, causing a thrombosis, or a septicemia, or meningitis, all of which are very serious conditions. The operation itself is not without some danger, but the danger is far greater if the infection extends beyond the mastoid air cells."

LEGISLATIVE ADVISER IN STATE AFFAIRS

JAMES O. WATSON, D.O.
Chairman
Columbus, Ohio

Most of the material below consists of brief descriptions of many bills introduced into the various state legislatures, having a more or less direct interest for physicians. In the limited space at our diposal, it is impossible to give any analysis of most such bills.

Interested physicians can, in nearly all cases, secure copies of the bills from their legislators, from the clerks of the respective houses, or from those who introduced them.

Legislative chairmen in all states have been requested to keep a close eye on developments and to send copies of bills, and other information, to the Legislative Adviser in State Affairs and to the Central office of the American Osteopathic Association. Revised copies should be sent whenever amendments are made, and as soon as a bill becomes a law a copy of the final form should be sent. It is better if, in every case, a note be written on the bill or act indicating the stage it had reached on a given date. In every case where the measure has been enacted, the date of approval should be given. Many legislative chairmen are keeping in close touch with the national officers in this connection.

Unless otherwise stated, the description of a bill means simply that it has been introduced. If we have information as to its passing one or both houses, its final enactment or its defeat, the fact is mentioned.

Florida

H. 1230—to eliminate that provision of the medical practice act which stipulates the make-up of the examining board as to the number of physicians representing each school of medicine.

S. 649 & H. 961—a massage and physical therapy practice bill.

Illinois

H. 809—a chiropody practice bill.
H. 866—a food, drug and cosmetic bill.

Maine

A bill was passed giving chiropractors the use of electrical equipment.

Massachusetts

H. 2528—to require the licensing of hospitals and sanatoriums by the state department of health.

Michigan

H. 580—to set up a bureau of cancer control in the state department of health.

Missouri

In Missouri the following bills were killed in the house or in the House Public Health Committee: No. 192 basic science; 202 injunction and quo warranto; 490 to amend the workmen's compensation act specifically to include doctors of osteopathy; 495 to define the words, "physician" and "surgeon" to include doctors of osteopathy; 519 to limit massage and manipulation.

Nebraska

The Supreme Court of Nebraska on May 2 rendered an opinion in a case appealed from Scotts Bluff County, in which it is said: "The practice of osteopathy consists of a system of manipulation of the limbs and body of the patient with the hands . . . without the aid of medicine or operative surgery. . . . Osteopathic physicians . . . are not entitled to enter into the general field of operative surgery with surgical instruments." This, despite the fact that osteopathy in Nebraska for many years has included operative surgery and there are numerous general osteopathic hospitals in the state. Obstetrical rights are specifically upheld by the court.

Thereafter a bill was introduced into the legislature to establish a board of examiners in surgery for holders of licenses to practice osteopathy, which would provide specifically that osteopathy includes "operative surgery with instruments." The bill was defeated by a slender margin.

Ohio

H. 474—to require registration of osteopathic physicians and setting as a prerequisite certain postgraduate work each year. Enacted.

State Boards

Connecticut

The next examinations will be held at the State Capitol, Hartford, July 1 and 2, 8:30 a.m. to 4:00 p.m. For further information address Frank F. Poglitsch, secretary, 300 Main St., New Britain.

Florida

The next examinations of the State Board of Osteopathic Medical Examiners will be held at Jacksonville, July 4 and 5. Application should be made at least two weeks prior to the examinations. For further information address N. E. Brown, Secretary, 809 Tampa Theatre Bldg., Tampa.

Georgia

The next examinations will be held on July 1 and 2. For further information address W. A. Hasty, secretary-treasurer, 303-04 Professional Bldg., Griffin.

Illinois

The next examinations will be held at Chicago, October 14, 15 and 16. For application blanks address Oliver C. Foreman, osteopathic examiner, 58 E. Washington St., Chicago.

Iowa

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol Building, Des Moines, on July 8, at 9:00 a.m. Address Ben H. Peterson, Ph.D., Secretary, Coe College, Cedar Rapids.

Kansas

Thomas W. Rowlett, Concord, recently was reappointed to the were reappointed to the Board for a four year term, ending May 23, 1945.

Michigan

Robert T. Lustig, Grand Rapids, recently was appointed to the Board to take the place of F. Hoyt Taylor, Lansing, and John D. Root, Leslie, to take the place of John P. Wood, Birmingham, whose terms had expired. C. Burton Stevens, Detroit, was elected secretary-treasurer of the Board.

Minnesota

The next basic science examinations will be held on October 7 at the University of Minnesota. Address the secretary, J. C. McKinley, M.D., University of Minnesota, Minneapolis.

North Carolina

The next examinations will be held at Raleigh, July 4 and 5. Applications and inquiries should be sent to Frank R. Heine, secretary-treasurer, Southeastern Bldg., Greensboro.

Thomas M. Rowlett, Concord, recently was reappointed to the Board for a five year term.

North Dakota

The next examinations will be held on July 1. Application blanks should be sent to J. O. Thoreson, secretary-treasurer, 10-12 Hoskins Block, Bismarck.

South Carolina

M. V. Huggins, Columbia, recently was reappointed to the Board for a four year term, ending in 1945.

Tennessee

C. L. Baker, Memphis, recently was reappointed to the Board for a five year term.

Book Notices

(See ad page 16)

Conventions and Meetings

Announcements

American Osteopathic Association, Forty-Sixth Annual Convention, Los Angeles, July 13-17, 1942. Program chairman, Otterbein Dressler, Philadelphia.

American College of Osteopathic Surgeons, Detroit, October 5-8.

District of Columbia osteopathic convention, October 28.

Indiana state convention, French Lick, September 21-23. Program chairman, Paul B. Blakeslee, Indianapolis.

Kentucky state convention, French Lick, Indiana, September 21-23.

Massachusetts state convention, January 17 and 18, 1942.

Michigan state convention, Pantlind Hotel, Grand Rapids, October 28-30. Program chairman, William H. Bethune, Grand Rapids.

Minnesota state convention, Hotel Nicollet, Minneapolis, May 1, 2, 1942. Program chairman, Will H. Flory, Minneapolis.

Missouri state convention, Joplin.

Nebraska state convention, Columbus, September. Program chairman, Charles A. Blanchard, Lincoln.

New Hampshire state convention, Concord, May 23, 1942, (tentative).

New Mexico state convention, Hobbs, September. Program chairman, L. D. Barbour, Eunice.

New York state convention, Hotel Commodore, New York City, October 10-12. Program chairman, H. Van Arsdale Hillman, New York City.

Oklahoma state convention, Hotel Biltmore, Oklahoma City, October. Program chairman, P. A. Harris, Oklahoma City.

Pennsylvania state convention, Hotel Bethlehem, Bethlehem. Program chairman, C. Haddon Soden, Philadelphia.

Vermont state convention, Barre, October 1, 2. Program chairman, R. H. Bartlett, Burlington.

West Virginia state convention, Clarksburg, 1942.

Wyoming state convention, Cheyenne, May, 1942.

OFFICIAL AND AFFILIATED ORGANIZATIONS

CALIFORNIA

Los Angeles City Osteopathic Society

On May 13, J. Gordon Hatfield assumed the presidency; D. M. Donisthorpe was elected president-elect; and C. J. Mount, secretary-treasurer. All are from Los Angeles.

Orange County Osteopathic Society

The following officers were installed in May: President, John S. Helmcken; vice-president, R. W. Tibbetts; secretary-treasurer, L. M. Young, all of Santa Ana.

San Diego Osteopathic Society

On May 6, E. S. Merrill, Los Angeles, spoke on "X-Ray Diagnosis in General Practice."

The following officers were elected: President, Gerald M. Hunt; vice-president, Robert K. Schiefer; secretary-treasurer, Elizabeth A. Pelsma, reelected, all of San Diego.

Sonoma County Osteopathic Society

The following officers were elected May 8: President, Bertram J. Green, Santa Rosa; vice-president, N. Fuller Robinson, Cloverdale; secretary-treasurer, George T. Reeve, San Rafael.

David B. Bosworth, Oakland, delivered an illustrated talk on "Hernia Injection," and Clara M. Miller, Alameda, discussed "The Relation of Posture to Disease."

COLORADO

Northern Colorado Osteopathic Association

On May 8, C. A. Tedrick, Denver, discussed "Cancer," and described the work of the Society for the Prevention of Cancer.

South Central Osteopathic Association

The following officers were elected at Saguache, May 5: President, L. E. Warren, Monte Vista; secretary-treasurer, Jack Vance, Saguache.

Denver City and County Osteopathic Society

The following are the present officers and committee chairmen: President, Arthur B. Funnell; vice-president, F. J. McAllister; secretary-treasurer and membership, Paul R. Isaacson; professional education, H. I. Magoun; hospitals, E. M. Davis; legislation, C. Robert Starks; public health and education and publicity, Mr. Joseph A. Myers, attorney, all of Denver.

DELAWARE

State Society

The following officers were elected on May 22: President, J. C. Bradford; vice-president, Merritt G. Davis; secretary, F. J. Berlin; treasurer, R. H. Rickards, all of Wilmington.

FLORIDA

Volusia County Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, professional education and professional development. Harry E. Bean; public health and education and publicity, Robert Beckwith; legislation, Donald S. Cann, all of Daytona Beach.

West Coast Society of Osteopathic Physicians and Surgeons

The following officers were elected on April 25: President, J. B. Cahill, St. Petersburg; vice-president, A. C. Walker, Tampa; secretary-treasurer, R. C. Wunderlich, St. Petersburg.

GEORGIA

State Association

The program for the thirty-ninth annual convention at Athens was reported in the April JOURNAL. The following officers were elected on May 17: President, Robert K. Glass, Atlanta; vice-president, W. C. Holloway, Thomasville; secretary, Kenneth H. Wiley, Atlanta, treasurer, M. Lillian Bell, LaGrange.

The following committee chairmen have been appointed: Membership, Dr. Bell; professional education, Walter B. Elliott Jr., Atlanta; hospitals, Matt Henderson, Atlanta, and D. L. Anderson, Atlanta, censorship, R. E. Andrews, Rome; student recruiting, H. H. Trimble, Moultrie; public health and social security, Dr. Glass and Walter L. Jones, Rome; industrial and institutional service, R. H. Brown, Columbus; clinics, Dr. Henderson; statistics, Sarah E. Johnson, Rome; legislation and Council on Defense and Preparedness, Hoyt B. Trimble, Atlanta; veterans' affairs, Grover C. Jones, Macon; radio, Frank F. Jones, Macon; speakers' bureau, D. C. Forehand, Albany; professional development, Ruth M. Glass, Atlanta; 1942 convention program, T. C. Hardman, Dalton; 1942 local arrangements, Dr. Holloway.

ILLINOIS

State Association

The officers were reported in THE JOURNAL for June. The following chairmen have been appointed:

Department of professional affairs, R. C. Slater, LaSalle; professional education and development, R. P. Armbruster, Pontiac; professional speakers' bureau, S. V. Robuck, Chicago; vocational guidance, Joseph J. Crismond, Pekin; hospitals, George O. Rose, Chicago; insurance, D. B. Heffelfinger, Chicago; censorship, Dr. Slater; visual education, Hal K. Carter, Streator.

Department of public affairs, Allen H. Miller, Rockford; industrial and institutional, L. R. Morgan, Alton; clinics, H. B. Somerville, Decatur; state fair clinic, C. C. Kalb, Springfield; public health and education, E. J. Drinkall, Chicago; public and professional welfare, D. D. Waitley, Evanston; editorial, R. F. Lindberg, Chicago; radio, Dr. Heffelfinger; unit contact, Fred B. Shain, Chicago; speakers' bureau, Dr. Miller; legislation, C. E. Cryer, El Paso.

Chicago Osteopathic Association

On May 1 the following officers were elected: President, D. B. Heffelfinger, reelected; vice-president, Alfred G. Boehm; secretary, Fred B. Shain, reelected; treasurer, A. S. Guernsey, all of Chicago.

Chicago—Southside Osteopathic Physicians' Society

The following meetings have been held recently: May 22, round-table discussions; May 29, H. D. Stewart, Chicago, "A Different Viewpoint of Neuritis;" June 5, round-table discussions.

Tri-City Osteopathic Association

At Rock Island, May 2, a motion picture on "The Education of an Osteopathic Physician," was shown.

Sixth District Illinois Osteopathic Association

At Quincy, May 22, H. D. McClure, Kirksville, Mo., spoke on "Nervous Diseases."

The following officers were elected: President, H. A. Wendorff, Quincy, vice-president, Mina L. Bixler, Springfield; secretary-treasurer, John L. Snow, Quincy.

Eighth District Illinois Osteopathic Association

E. C. Beckmeyer, Mt. Vernon, was elected president instead of John J. Wood, Centralia, as published in the June JOURNAL.

INDIANA

Northeastern Indiana Association of Osteopathic Physicians and Surgeons

At Kendallville, May 14, R. N. MacBain, Chicago, spoke on "The Principles of Osteopathy."

The June meeting was scheduled to be held on the 11th at Klinger Lake.

Northern Indiana Osteopathic Association (Fourth District)

On May 1, C. W. Odell, South Bend, discussed "Osteopathic Management of Seasonal Backache."

On May 7, "Is Orthodox Medicine Adopting Osteopathy?" was discussed.

On May 16, at New Carlisle, E. O. Peterson, LaPorte, and E. B. Porter, South Bend, were the principal speakers.

First District Indiana Osteopathic Association

The following officers were elected on May 14: President, Joseph C. Stone, Kokomo; vice-president, Glen Miller, Anderson; secretary-treasurer, James A. Dillon, Noblesville.

IOWA

State Society

The following officers were elected on May 8: President, Holcomb Jordan, Davenport, reelected; vice president, Mary E. Golden, Des Moines; secretary-treasurer, Mr. Dwight James, Des Moines, elected for a three year term.

The following chairmen have been appointed: Department of professional affairs, J. K. Johnson, Jr., Jefferson; membership, H. L. Gulden, Ames; convention program, Dr. Golden; hospitals, H. A. Graney, Des Moines; censorship, J. W. Rinabarger, Keosauqua; vocational guidance, John Q. A. Mattern, Des Moines; convention arrangements, Ruth Paul, Des Moines; ophthalmology, H. J. Marshall, Des Moines; public and professional welfare, Theodore M. Tueckes, Davenport; press relations, J. R. Forbes, Swea City; public education, Lester P. Fagen, Des Moines; public service radio, O. Edwin Owen, Des Moines.

Department of public affairs, D. E. Hannan, Perry; legislation, S. H. Klein, Des Moines; attorney, Mr. James; veterans affairs, H. D. Wright, Hampton; child health conference, Beryl Freeman, Des Moines; industrial and institutional, P. O. French, Cedar Rapids; maternal and child health, Dr. Golden.

Dallas County Osteopathic Society

The following were reelected March 19: President, L. A. Utterback, Perry; vice-president, Jonh I. Royer, Woodward; secretary-treasurer, Grace B. Nazarene, Dallas Center. Committee chairmen are: censorship, Laura E. Miller, Adele; public health and education, D. E. Hannan, Perry.

Polk County Osteopathic Association

On May 2 the following officers were elected: President, Lonnie L. Facto; vice president, Paul E. Kimberly; secretary, D. E. Sloan; treasurer, R. V. Templeton, all of Des Moines.

KANSAS

Central Kansas Association of Osteopathic Physicians and Surgeons

The following officers were elected on May 15: President, E. G. Nigh, McPherson; vice president; G. C. Martin, secretary-treasurer, Lawton M. Hanna, Clay Center, reelected. Committee chairmen have been appointed as follows: Membership, Dr. Martin; public health and education, William S. Childs, Salina; program, L. A. Moore, Herington.

South Central Kansas Osteopathic Society

At Eureka, May 29, R. A. Steen, Emporia, spoke on "State Association Affairs."

The following officers were elected: President, C. B. Myers, Madison; vice president, P. W. Gibson, Winfield; secretary-treasurer, A. L. Quest, Augusta, reelected. Esther Smoot, Eureka, was appointed chairman of clinics.

The next meeting will be held in September.

MAINE

Oxford County Osteopathic Association

The regular monthly meeting was held at Lake Keewaydin in East Stoneham, May 21.

MASSACHUSETTS

Mystic Valley Osteopathic Society of Massachusetts

The following are the present officers and committee chairmen: President, trustee, membership and legislation chairman, Roland V. Marsolais, Melrose Highlands; vice president and program chairman, H. Earle Beasley, Reading; secretary-treasurer, Allen F. Fehr, Malden; publicity and arrangements, Arthur Bunting, Malden.

Worcester District Osteopathic Society

On June 4, Alex F. McWilliams, Boston, spoke on "Technic for Low-Back Conditions."

MICHIGAN

Oakland County Osteopathic Society

The following officers were elected on May 22: President, R. E. Becker, Pontiac; vice president, L. A. Criswold, South Lyon; secretary-treasurer, T. F. Schooley, Birmingham.

Committee chairmen are: Censorship, L. G. Huddle, Ferndale; industrial and institutional service, Dr. Schooley; publicity, Dr. Becker.

South Central Osteopathic Association

On May 15, Probate Judge Charles O. Arch, Hillsdale, spoke on "The Crippled and Afflicted Child."

MINNESOTA

State Association

The following officers were elected on May 2: President, Grace H. Meyers, Minneapolis; vice president, Claude R. Graham, Rochester; secretary-treasurer and editor, Arthur J. Smith, Minneapolis, reelected.

Committee chairmen have been appointed as follows: Membership and statistics, Martin S. Hedeen, St. Paul; professional education and public health and education, Albert Lewis, Faribault; censorship, Arthur E. Allen, Minneapolis; student recruiting, Robert H. Clark, Northfield; clinics, convention program, and displays at fairs and expositions, Will H. Flory, Minneapolis; publicity and professional development, Frank F. Graham, Winona; convention arrangements, Dr. Meyers; legislation, George F. Miller, St. Paul.

MISSOURI

Northwest Missouri Osteopathic Association

At the April meeting, L. S. Larimore, Kansas City, spoke on "Practical Points in Diagnosis and Treatment of Eye, Ear, Nose and Throat Conditions."

Osage Valley Osteopathic Association

The regular monthly meeting was held at Tuscumbia, April 24.

Ozark Osteopathic Society

At Ozark, June 2, T. M. King, Springfield, spoke on "Forty Years of Osteopathy."

The next meeting is to be held at Bolivar in September.

Southwest Missouri Association of Osteopathic Physicians and Surgeons

At Neosho, May 21, M. S. Slaughter, Webb City, spoke on "Fundamentals of Osteopathy."

The July meeting is to be held on the 16th at Monett.

NEW HAMPSHIRE

State Society

The annual convention of the New Hampshire Osteopathic Society was held at Hotel Rice-Varick, Manchester, May 24. The following program was presented: "Panel Discussion on Present Legislative Affairs," Osmond R. Strong, Concord; "All In a Day's Work," R. Kenneth Dunn, Brattleboro, Vt.; "Legislative Problems and Osteopathic Participation in Defense and Preparedness," Albert E. Chittenden, Auburn, Me.; "The State Laboratory—What It Has to Offer to the Practicing Physician," W. R. MacLeod, State Bacteriologist, Concord.

The following officers were elected: President, Robert E. Maxwell, Nashua; vice president, Karl A. Stead, Laconia; secretary-treasurer, A. L. Pimentel, Concord; membership and ethics, Drs. Maxwell, Steady, Pimentel and Strong; student recruiting, Charles H. Bowles, Plymouth; publicity, Ralph G. Beverly, Keene; legislation, Dr. Strong.

NEW JERSEY

Atlantic and Cape May County Osteopathic Society

On May 17, the following officers were elected: President, Kirk L. Hilliard, Pleasantville; vice president, Nathan C. Ostroff, Atlantic City; secretary-treasurer, Carl J. Isman, Atlantic City.

Essex County Osteopathic Society

At Bloomfield, May 20, Jerome M. Watters, Newark, N. J., spoke on "Diagnosis and Treatment of Nasal Allergy."

The following officers have been reelected: Robert D. Patterson, South Orange; vice president, William C. Bugbee, Montclair; treasurer, Daniel L. Walker, Bloomfield. Herbert E. C. Ulrich, Short Hills, is the secretary.

Union County Osteopathic Society

On May 14, Joseph F. Py, Philadelphia, spoke on "The Basic Osteopathic Principles."

NEW YORK

Hudson River North Osteopathic Society

On May 3, Melvin B. Hasbrouck, Albany, spoke on "Osteopathy and the Defense Program."

Mohawk Valley Osteopathic Society

At Utica, May 28, H. G. Stephenson, M.D., Utica, Director of Medical and Surgical Care, Inc., presented insurance statistics.

Rochester District Osteopathic Society

At Rochester, May 23, Melvin B. Hasbrouck, Albany, was the guest speaker.

The following officers were elected: President, James H. Reid; vice president, George T. Smith; secretary-treasurer, H. Frederick Raab; board of directors, Charles Norfleet, Hewett W. Strever, Hanford Petri, all of Rochester.

Westchester County Osteopathic Society

On May 1, Otterbein Dressler, Philadelphia, spoke on "Principles of Osteopathy." Guests for the evening were members of the Westchester Library Association and of the Westchester Guidance and Personnel Association.

On May 7, the following officers were reelected: President, Alvah H. Leeds, Yonkers; vice president, W. L. Hitchcock, Rye; secretary, A. R. Gildersleeve, Mt. Vernon; treasurer, W. B. West, Port Chester. Theodore R. McLean, Scarsdale, was elected sergeant-at-arms.

OHIO

State Association

The following officers were elected on May 13: President, Donald W. Hampton, Cleveland; vice president, E. C. White, Canton; treasurer, James O. Watson, Columbus, reelected; executive secretary and managing editor, Mr. William S. Konold, Columbus, reelected.

Central Ohio Osteopathic Society

The following officers were elected on April 10: President, A. P. Bumstead, Columbus; vice president, Henry F. Scatterday, Westerville; secretary-treasurer, Frank Spencer, Columbus. Committee chairmen were appointed as follows: Membership, Dr. Scatterday; professional education, S. A. Hall, Columbus; hospitals and clinics, R. G. Mertens, Columbus; censorship, Dr. Spencer; student recruiting, Charles M. LaRue, Columbus; public health and education and publicity, William Lowry, Columbus; convention arrangements, R. R. Lang, Columbus; legislation, R. S. Licklider, Columbus.

First (Toledo) District Osteopathic Society

The following officers were elected in May: President, F. F. Yoder, Bellevue; vice president, Paul E. Black, Toledo; secretary-treasurer, Kenneth R. Weaver, Findlay, reelected.

Second (Cleveland) District Osteopathic Society

On May 5, C. F. Rauch, Logan, spoke on "Osteopathic Highlights from Ian Street."

The following officers were elected: President, Ralph W. Kelley; vice president, Paul M. Wherritt; secretary-treasurer, Helen C. Hampton, reelected, all of Cleveland. The following committee chairmen have been appointed: Membership, C. C. Foster, Lakewood; professional education, public health and education, professional development, C. A. Purdum; hospitals, R. A. Sheppard; censorship, Dr. Wherritt; publicity, Robert S. Roscoe; legislation, L. C. Nagel; displays at fairs and expositions, H. W. Weichel, all of Cleveland.

Third (Akron) District Osteopathic Society

At Kent, June 4, Dr. K. C. Leebrick, president of Kent State University, spoke on "International Affairs."

The officers were reported in THE JOURNAL for June. L. E. Sowers, Warren, has been elected secretary-treasurer.

The following committee chairmen have been appointed: Membership, J. F. Rader, Massillon; professional education and development, G. M. Stevenson, Kent; hospitals and clinics, Arthur L. Harbarger, Akron; censorship, N. A. Ulrich, Kent; student recruiting, A. E. Smith, Youngstown; industrial and institutional service, Robert T. Southard, Canton; publicity and statistics, L. E. Sowers, Warren; legislation, J. P. Flynn, Alliance; displays at fairs and expositions, John C. Eschliman, Youngstown.

Fifth (Dayton) District Osteopathic Society

On May 6, Warren W. Custis, Dayton, spoke on "General and Bedside Technic."

OKLAHOMA

Kay County Osteopathic Association

On April 10, at Ponca City, C. D. Heasley, Tulsa, was the principal speaker.

OREGON

State Association

(See Washington State—Northwest Osteopathic Convention)

Portland Osteopathic Society

On April 10, a round-table discussion on technic was conducted.

At the May meeting, Carroll L. Whitney, Portland, spoke on "X-Ray Demonstrations of Short Leg."

PENNSYLVANIA

Willamette Valley Osteopathic Society

The regular monthly meeting was held at McMinville, May 17.

TENNESSEE

West Tennessee Osteopathic Association

At Reelfoot Lake, May 18, L. D. Chesemore, Paris, spoke on "Office Procedure: The Business Side of Practice," and H. M. Eckerson, Memphis, demonstrated "Mid-Thoracic Technic."

The next meeting is to be held at Trenton, in July.

TEXAS

North Texas District Association of Osteopathic Physicians and Surgeons

At a recent meeting at Grand Prairie, the following program was presented: "Welcoming Address," Mayor G. H. Turner, Grand Prairie; "Response," Dar D. Dailey, Weatherford; "Feather-Bed Backaches," Roy G. Russell, Fort Worth; "Cause and Treatment of Athletes Foot," J. M. McPherson, Dallas; "Osteopathic Care of Industrial Injuries," J. W. Crawford, Dallas; "Disabled Shoulders and Elbows," C. H. Hancock, Denton.

UTAH

State Association

The following officers were elected on May 31: President, L. W. Spencer; vice president, C. E. Conklin; secretary-treasurer, Alice E. Houghton, reelected, all of Salt Lake City.

WASHINGTON

State Association

The Northwest Osteopathic Convention was held at the Winthrop Hotel, Tacoma, June 2-4. This was a joint meeting of the Washington, Oregon, and British Columbia osteopathic associations. The following program was presented:

June 2—"Differential Diagnosis From a Structural Standpoint," J. S. Denslow, Kirksville, Mo.; "Practice Builders," Fred S. Richards, Forest Grove, Ore.; "Upper Gastrointestinal Tract," A. T. Rhoads, Kirksville, Mo.; "Why the Public?" G. H. Parker, Spokane; "The pH in Health and Disease," B. R. LeRoy, Tacoma; "Problems of the Profession," R. C. McCaughan, Chicago, Executive Secretary of the A.O.A.; "Use of the Psoas Muscles in Lumbar Technic," H. V. Hoover, Tacoma; "An Approach to Our Problems," Wm. E. Hinds, Hillsboro, Ore.

June 3—"Common Endocrinopathies," and "Hypertensive Heart Disease," Dr. Rhoads; "Problems of the Profession," Dr. McCaughan; "Diagnosis and Treatment of Low-Back Conditions in Relation to the Body Framework as a Whole," Ruth Eaton, Oregon City, Ore.; "Essential Principles in Manipulative Therapy—Part I," Dr. Denslow.

June 4—"Technic," Dr. Eaton; H. V. Hoover, Tacoma, and E. R. Lyda, Seattle; "Essential Principles in Manipulative Therapy—Part II," Dr. Denslow; "Feeding of Normal Infants," Margaret Ingle, LaGrande, Ore.; "Military Medicine," N. H. Dorn, Tacoma; "Hypertension," Dr. Rhoads.

WEST VIRGINIA

State Society

The following officers were elected on May 19: President, A. B. Graham, Wheeling; vice president, T. H. Lacy, Parkersburg; secretary-treasurer and editor, Guy E. Morris, Clarksburg, reelected.

WYOMING

State Association

The following officers were elected on May 29: President, G. R. Hollman, Torrington; vice president, M. O. Fuerst, Riverton; secretary-treasurer, G. A. Roulston, Cheyenne, reelected.

CANADA

British Columbia Osteopathic Association

(See Washington state—Northwest Osteopathic Convention)

Ontario Academy of Osteopathy

The following officers were elected on May 3: President, C. V. Hinsperger, Windsor; vice president, J. I. St. Clair Parsons, Ottawa; business manager, E. S. Detwiler, London. Committee chairmen have been appointed as follows: Membership, Dr. Parsons; professional affairs, Olive Matthews, Kitchener; legislation, M. E. Moyer, Hamilton; conventions, J. E. Wilson, Barrie; institutional affairs, H. W. Sutton, Hamilton.

Western Ontario Osteopathic Association

At London, June 4, the following program was presented: "Symposium: The Brachial Field"—"The Anatomical Layout," C. R. Merrill, Stratford; "The Commoner Symptom Groups," C. V. Hinsperger, Windsor; "The Etiology and Effects in the Tissues," A. G. Davison, London; "Treatment Technics," E. S. Detwiler, London; "Hay Fever: Brachial and Other Factors in Etiology," E. J. Gray, St. Thomas.

British Osteopathic Association

Frederic R. Davis, London, has been made Acting Hon. Secretary in place of Leslie Dawe, who was killed last year.

SPECIAL AND SPECIALTY GROUPS

New England Osteopathic Association

At the annual convention held on May 9 and 10 at Boston, the following officers were elected: President, William T. Knowles, Boston; vice president, Lyle Jacobs, Springfield, Vt.; secretary, Mildred E. Greene, Waltham, Mass., reelected; treasurer, Floyd Moore, Brookline, Mass., reelected; sergeant-at-arms, Foster D. Clark, Torrington, Conn.

Osteopathic Clinical Society

At the Sterling Hotel, Wilkes-Barre, Pa., May 18, Antonio Abeyta, Philadelphia, spoke on "Practical Ocular Therapeutics for the General Practitioner," illustrating the talk with color slides, and showed a color motion picture on "Intracapsular Cataract Extraction, Suction Method." Clinics were held in the afternoon.

Edwin H. Cressman, Philadelphia, assumed the presidency. Officers elected were as follows: President-elect, L. C. Mook, Lancaster, Pa.; vice president, Lloyd E. Hershey, Honey Brook, Pa.; secretary, William H. Lodge, Hershey, Pa.; treasurer, Phineas Dietz, Harrisburg, Pa.

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Books Received

MANIPULATIVE TREATMENT OF ATHLETIC INJURIES TO JOINTS. By Floyd P. St. Clair, B.A., D.O. Cloth. Pp. 88, with 15 illustrations. Golden West Press, Hollywood, Calif., 1941.

THE NEW INTERNATIONAL CLINICS. New Series 4, Vol. II. Edited by George Morris Piersol, M.D. Cloth. Pp. 299, with illustrations. June, 1941. Price, $12.00 a year for four issues. J. B. Lippincott, East Washington Square, Philadelphia.

PROFESSIONAL APTITUDE TESTS IN MEDICINE, LAW, AND ENGINEERING. By I. L. Kandel, M.A., Ph.D., Litt.D. Cloth. Pp. 78. Price, $1.60. Teachers College, Columbia University, New York City, 1940.

ARTHRITIS AND ALLIED CONDITIONS. By Bernard I. Comroe, A.B., M.D., F.A.C.P. Second Edition. Cloth. Pp. 878, with 242 illustrations. Price, $9.00. Lea and Febiger, Washington Square, Philadelphia, 1941.

MAN STANDS ALONE. By Julian S. Huxley. Cloth. Pp. 297. Price, $2.75. Harper and Brothers, 49 East 33rd Street, New York City, 1941.

ESSENTIALS OF ENDOCRINOLOGY. By Arthur Grollman, Ph.D., M.D. Cloth. Pp. 480, with 74 illustrations. Price, $6.00. J. B. Lippincott Company, East Washington Square, Philadelphia, 1941.

A TEXTBOOK OF OPHTHALMOLOGY. By Sanford R. Gifford, M.A., M.D., F.A.C.S. Second Edition. Cloth. Pp. 470, with illustrations. Price, $4.00. W. B. Saunders Company, West Washington Square, Philadelphia, 1941.

MEDICINE AND HUMAN WELFARE. By Henry E. Sigerist, M.D., D.Litt. Cloth. Pp. 148, with 20 illustrations. Price, $2.50. Yale University Press, 143 Elm Street, New Haven, Conn., 1941.

BIOLOGICAL ASPECTS OF INFECTIOUS DISEASE. By F. M. Burnet, M.D. Cloth. Pp. 310, with 9 illustrations. Price, $3.75. At the Cambridge University Press, Cambridge, Mass. The Macmillan Company, 60 Fifth Avenue, New York City, 1941.

PAUL BUNYAN: THE WORK GIANT. By Ida Virginia Turney. Cloth. Illustrated. Price, $1.50. Binfords and Mort, 40 N. Ninth St., Portland, Ore., 1941.

A BRIEF AND TRUE REPORT CONCERNING WILLIAMSBURG IN VIRGINIA. By Rutherford Goodwin. Fourth and Abridged Edition. Cloth. Pp. 141, with illustrations. Price, $1.00. Colonial Williamsburg, Inc., Williamsburg, Va., 1941.

THE SOCIAL RELATIONS OF SCIENCE. By J. G. Crowther. Cloth. Pp. 665. Price, $3.50 The Macmillan Company, 60 Fifth Avenue, New York City, 1941.

MAN—THE MECHANICAL MISFIT. By G. H. Estabrooks. Cloth. Pp. 251. Price, $2.50. The Macmillan Company, 60 Fifth Avenue, New York City, 1941.

A HISTORY OF MODERN PHILOSOPHY. By William Kelley Wright. Cloth. Pp. 633. Price, $3.00. The Macmillan Company, 60 Fifth Avenue, New York City, 1941.

ESSENTIALS OF NUTRITION. By Henry C. Sherman and Caroline Sherman Lanford. Cloth. Pp. 418, with illustrations. Price, $3.50. The Macmillan Company, 60 Fifth Avenue, New York City, 1941.

BIOGRAPHY OF THE GODS. By A. Eustace Haydon. Cloth. Pp. 352. Price, $2.50. The Macmillan Company, 60 Fifth Ave., New York City, 1941.

THE AMERICAN CAUSE. By Archibald MacLeish. Cloth. Pp. 43. Price, $1.00. Duell, Sloan & Pearce, Inc., 270 Madison Ave., New York City, 1941.

PSYCHOSOMATIC MEDICINE MONOGRAPH. I—Mucous Colitis: A Psychological Medical Study of Sixty Cases. By Benjamin V. White, M.D.; Stanley Cobb, M.D., and Chester M. Jones, M.D. Published in 1939. II-III—The Traumatic Neuroses of War. By Abraham Kardiner, M.D. Published in 1941. Paper. Pp. I—103; II-III—258. Price, I—$2.00; II-III—$3.00. National Research Council, Washington, D.C.

IS THE KINGDOM OF GOD REALISM? By E. Stanley Jones. Cloth. Pp. 284. Price, $2.00. Abingdon-Cokesbury Press, 150 Fifth Avenue, New York City, 1940.

THE ART OF COUNSELING: HOW TO GAIN AND GIVE MENTAL HEALTH. By Rollo May. Cloth. Pp. 247. Price, $2.00. Abingdon-Cokesbury Press, 150 Fifth Avenue, New York City, 1939.

ESSENTIALS OF DERMATOLOGY. By Norman Tobias, M.D. Cloth. Pp. 497, with 143 illustrations. Price, $4.75. J. B. Lippincott Company, East Washington Square, Philadelphia, 1941.

THORNDIKE CENTURY SENIOR DICTIONARY. By E. L. Thorndike. Cloth. Pp. 1065. Price, $2.48; thumb-indexed, $2.72. Scott, Foresman and Company, 623 S. Wabash Ave., Chicago, 1941.

HYGIENE: A TEXTBOOK FOR COLLEGE STUDENTS ON PHYSICAL AND MENTAL HEALTH FROM PERSONAL AND PUBLIC ASPECTS. Third Edition. By Florence L. Meredith, B.Sc., M. D. Cloth. Pp. 882, with 183 illustrations. Price $3.50. The Blakiston Company, 1012 Walnut St., Philadelphia, 1941.

INTRODUCTION TO PSYCHOBIOLOGY AND PSYCHIATRY. By Esther Loring Richards, M.D., Sc.D. Cloth. Pp. 357. Price, $2.50. The C. V. Mosby Company, 3523-25 Pine Blvd., St. Louis, 1941.

AIDS TO ANATOMY (Pocket Anatomy). By Edward P. Stibbe, F.R.C.S. Tenth Edition. Cloth. Pp. 369, with 50 illustrations. Price $1.50. The Willaims and Wilkins Company, Mt. Royal and Guilford Aves., Baltimore, 1940.

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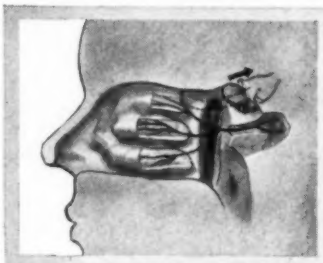

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A larger proportion of the men in the age range 18 through 25 were found physically fit for military service than in age groups above that level, according to a report made by Colonel Samuel J. Kopetzky, Chief of the Medical Division, New York City Selective Service, submitted May 31 to Colonel Arthur V. McDermott, New York City Director.

The report is based on a statistical study of the medical reports of 82,565 registrants examined under the Selective Service System and was compiled by Dr. Arthur M. Tiber, in charge of the Statistical Section, Medical Division.

Of the 82,565 men whose medical reports were studied, 37,329, or 45.21 per cent, were in the age group 18 through 25. Of them, 21,897 were accepted for full military service and inducted into the Army, while 8,373 were classified as 1-B, and 7,059 were disqualified for any service.

Commenting on the study of Colonel McDermott, Colonel Kopetzky declared that it was undertaken as a contribution to the widespread current discussions regarding the most favorable age range to be encompassed by the Selective Training and Service Act. Under the present law, men between 18 and 36 may be selected for service. Those under 21 however, are not compelled to register, but if over 18 may volunteer for a year's training under the provisions of the Act.

For the purposes of the study, three age groups were set up. Besides the bracket 18 through 25, there were grouped those from 26 through 30 years, and 31 through 35.

In the 26-31 bracket, there were 25,900, or 31.37 per cent of the 82,565 under study. Of this group, 12,418 were accepted for service, 7,316 were classified as 1-B, and 6,166 were disqualified for service. In the oldest age bracket were 19,336 registrants, of which 6,948 were actually inducted into the Army, 6,756 were classified as fit for limited service, and 5,632 held unfit for any service.

In a compilation of inductions into service, the study showed that of the 41,263 men now taking their year's training 53.07 per cent are in the lowest age bracket, 30.09 per cent are in the middle group, and 16.84 per cent are "oldsters."

Reflecting the proportion of each age group finally accepted for service, the study showed that 58.64 per cent of the youngest age bracket are in the Army, 47.94 per cent of the middle bracket, and 35.91 per cent of those 31 to 36 years of age.

On the other side of the picture, the men disqualified for any service in each group showed that 18.95 per cent of the youngest bracket was rejected by the Army, 23.81 per cent of the middle group, and 29.24 per cent of the oldest group.

In his conclusions on the significance of the material studied, Colonel Kopetzky said:

"It is obvious, that with the enforcement of the rigid physical standards which Selective Service entails, physical defects are less in the younger age groups. It is also obvious that the less disabling defects, many remediable, are mostly in the younger age groups. In other words, were those totally disqualified in the age group of those under 25 years deducted from the number available, 78.05 per cent of these registrants would be available for some degree of

Book Notices

THE BOOK OF THE STATES, 1941-1942, Vol. IV. Cloth. Pp. 423. Price, $3.50. The Council of State Governments, 1313 E. 60th Street, Chicago, 1941.

For the fourth year the Council of State Governments has brought out this unique reference manual on the 48 states, containing routine information on state organization, personnel, dates of legislative sessions, etc., and which contains also information about what has gone on in the states during the biennium just passed. There is considerable information about the Council of State Governments, and much tabular material, showing the occurrence of certain types of laws, dates of adoption of major state taxes, assessed valuations of property, qualifications for voting, etc.

PROFESSIONAL APTITUDE TESTS IN MEDICINE, LAW, AND ENGINEERING. By I. L. Kandel, M. A., Ph. D., Litt. D., Professor of Education, Teachers College, Columbia University. Cloth. Pp. 78. Price, $1.60. Teachers College, Columbia University, New York City, 1940.

A little book, unindexed, containing a general discussion as an introduction, and one chapter on each of the three professions named in the title. It is a continuation of the author's investigation of objective measures, published by the Carnegie Foundation for the Advancement of Teaching as Bulletin No. 28, "Examinations and Their Substitutes in the United States."

AIDS TO ANATOMY (Pocket Anatomy). By Edward P. Stibbe, F.R.C.S. Tenth Edition. Cloth. Pp. 369, with 50 illustrations. Price, $1.50. The Williams and Wilkins Company, Mt. Royal and Guilford Aves., Baltimore, 1940.

The number of editions through which this handy abstract has gone testifies to its value. Features of the tenth edition are a number of line diagrams; replacement of contractions and code letters by full words; a readjustment of type to give a bolder presentation; a few explanatory paragraphs and brief clinical illustrations.

Extracts

ARMY-CONTROLLED CORRECTION OF MINOR PHYSICAL DEFECTS AMONG REGISTRANTS UNDER SELECTIVE SERVICE LAW IS SUGGESTED

Broadening of the Selective Service law to provide for Army-controlled correction of minor physical defects of registrants who otherwise are available for full military service was suggested by Colonel Samuel J. Kopetsky, Chief of the Medical Division, New York City Selective Service, in a report submitted April 26 to Colonel Arthur V. McDermott, New York City Director.

The recommendation is based on findings of ""Medical Bulletin No. 3," a complete statistical study of the causes for which men were rejected for a year's military training through the first six induction periods, or up to

(Continued on page 17)

military service, the larger proportion, 58.64 per cent, capable of full military duty."

According to the Census Bureau's figures, there is available manpower in the United States in the age group below 25 years, 8,361,762 white males and 962,486 non-white males in the population. Approximately 5 per cent of these figures are available manpower in the New York City area, the report said.

(Continued from middle column on page 16)

March 15, compiled by Dr. Arthur M. Tiber, in Charge of the Medical Statistical Section [See April JOURNAL, 1941, ad page 25, for report on first three induction periods.]

Emphasizing the potential benefits to community and national health, Colonel Kopetzky proposed "provisional induction into the Army of such men for immediate transfer to hospital care for curative therapy," and after convalescence at a camp where body building would be undertaken, "induction for service would proceed in the usual way."

The statistical report showed that about one out of every four men examined by Local Board Examining Physicians in New York City is placed in Class 1-B, available for limited military service only, because of minor physical defects. Colonel Kopetzky commented:

"When the record is studied, the status of those classified as able to perform limited military service, because of easily remediable defects, deserves more than casual attention.

"In the group of 46,875 men under survey, 11,647 are discovered, many of whom, with very little effort or expense, could be made not only physically fit for full military duty, but also better equipped to meet the exigencies of daily life. Just to cite a few examples, there are 141 men whose weights are out of proportion to their heights, some of whom need only dietary and vitamin therapy to make them physically fit; 506 men with obstructed nasal passages which could be easily remedied; 1,132 men with hernias which surgical therapy easily could correct; 148 with gonorrhea and 626 with syphilis, which responds to adequately applied therapy. These are pertinent examples.

"As long as the remedial therapy is allowed to remain an elective procedure which the registrant may take or leave as suits his individual preference, so long will persons with evident gonorrhea and syphilis be free to spread the infection in the community and, incidentally, evade their military duty, to cite only one example of pertinent factors at issue in the question.

"For the Army itself to handle not only these, but all the rest of the remediable deficiences in the localities where they exist—in the New York region within the Second Corps area—is the cheapest, safest and most expeditious way to meet the problem.

"It would not entail a very extensive plan, nor would the medical work conflict with the average practice of civilian physicians in the community. The majority of these men are not the patients of privately practicing physicians."

Colonel Kopetzky indicated he is evolving a plan and was prepared to submit it to the National Board of Physical Rehabilitation.

The statistical report compiled by Doctor Tiber comprises the result of physical examinations of 46,857 registrants. Of these, 23,818 were inducted into the Army, amounting to 50.81 per cent of the total. Into Class I-B were placed 11,647 men, or 24.85 per cent, while 11,410, or 24.34 per cent, were placed in Class IV-F, unfit for any military service.

The number of registrants rejected for physical reasons alone by the Army examining teams at the Induction Stations during the six induction periods amounted to 3,226 men, or 11.93 per cent of the total.

This latest study of rejections bears out results reported in previous studies. Teeth and vision defects remain the two leading reasons for rejections, amounting to 8.57 and 8.11 per cent, respectively.

The report noted one significant change as compared with preceding reports. This concerned genito-urinary organs and venereal diseases. The number of defects in this category increased from 3.60 per cent reported

(Continued on page 18)

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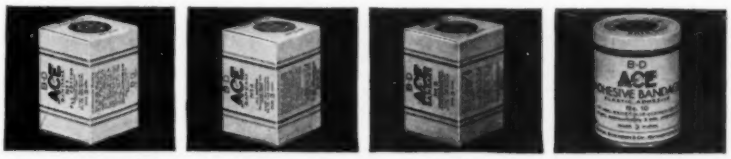

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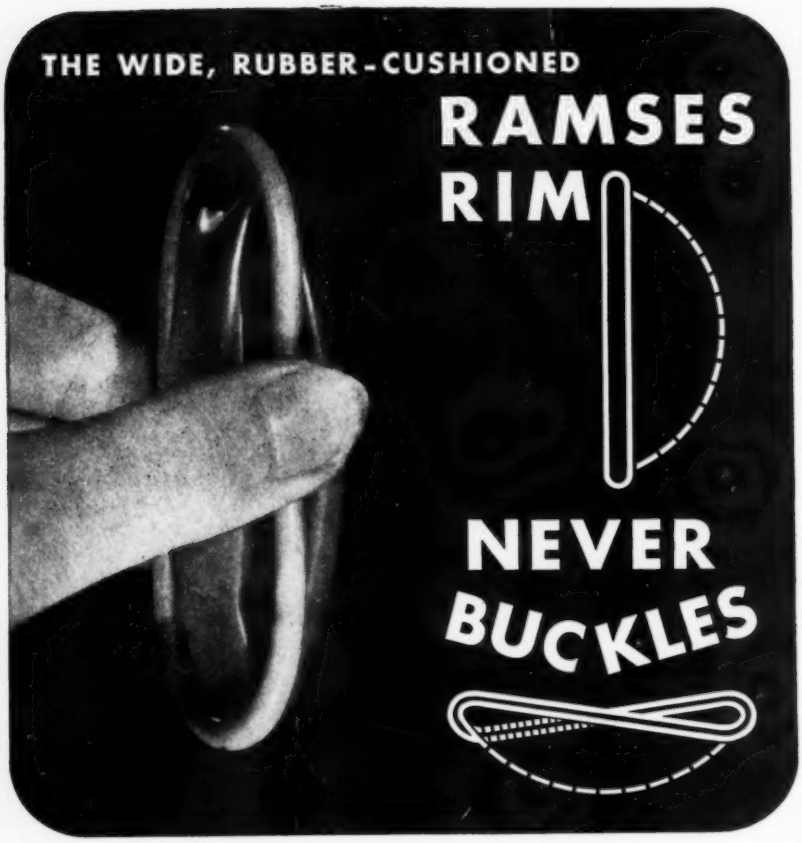

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THE RAMSES METHOD OF CONTRACEPTION

(Continued from page 17)

for the first three induction periods to 4.24 per cent in the current report.

"The use of the x-ray in the determination of pulmonary tuberculosis again demonstrates its usefulness. At the Induction Stations where the x-ray is used in the examination of every registrant, 50 per cent additional times was tuberculosis diagnosed over the number of reports of rejection for this condition at the Local Board examinations."—From Office of the Director, New York City Selective Service, April 23, 1941.

CHANGES OF ADDRESS AND NEW LOCATIONS

Ackley, H. M., from 735 N. Water St., to 208 E. Wisconsin Ave. Milwaukee, Wis.

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Bartlett, Curtis H., from 902 Hanselman Bldg., to 604-06 Kalamazoo Natl. Bank Bldg., Kalamazoo, Mich.

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Davidson, E. S., from Melbourne, Australia, to 608 Citizens Bldg., West Palm Beach, Fla.

Dunning, J. J., from London, England, to 9157 Sunset Blvd., Los Angeles, Calif.

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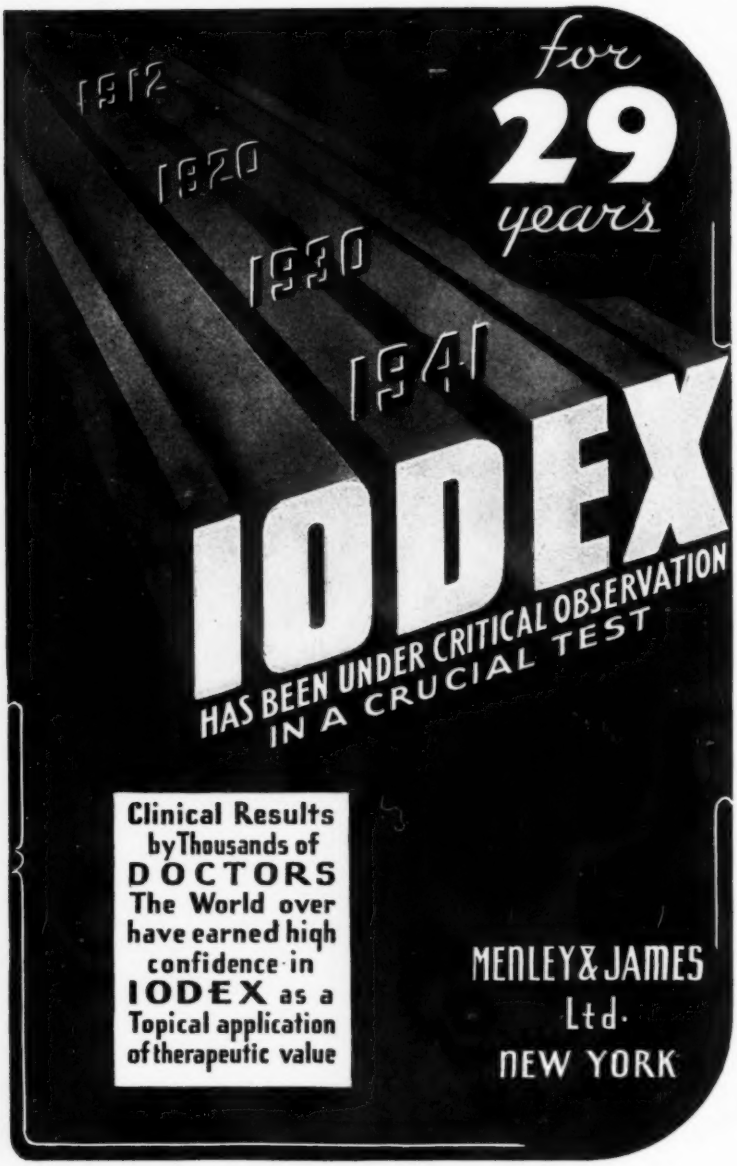

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Graduates

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Chicago College of Osteopathy

Bauer, Herbert G.
Cyman, Frank
Durkee, Joseph B.
Genge, William J.
Holt, James L.
Lindley, Donald E.
Martin, Robert H.
Mitchell, Fred L.
Pratt, Harrison W.
Wettlaufer, Robert H.
Zilvitis, Bruno

Des Moines Still College of Osteopathy

Blust, J. F.
Chandler, William P., Jr.
Fowler, Kenneth L.
Gateman, David
Glantz, Wesley H.
Hofer, Harland G.
Johnston, Howard A.
King, Joseph G.
Linck, Tom
Neilson, Ossian G.
Owen, Roy M.
Riggle, Kenneth B.
Sperling, Victor J.
Stanfield, John R.
Stern, Philip
Woods, Robert M.
Yagoobian, James M.

Kirksville College of Osteopathy & Surgery

Dearing, H. H.
Dinsmore, G. C.
Drew, Charles H., Jr.
Enochs, R. A.
Jones, E. Gale
Jones, Ollie H.
Lake, C. D.
Lange, Joseph E.
MacRae, Thelma J.
Mantle, Albert E.
McClure, Robert H. M.
Mailhiot, Armand A.
Newsome, Annie S.
Nyfeler, Harold B.
Palm, Julie T.
Plaid, Chan L.
Remmetter, Leo J., Jr.
Stowell, I. T.
Swift, Elwood W.
Timmins, William J., Jr.
Turfler, David E.
White, Orrick W.

Philadelphia College of Osteopathy

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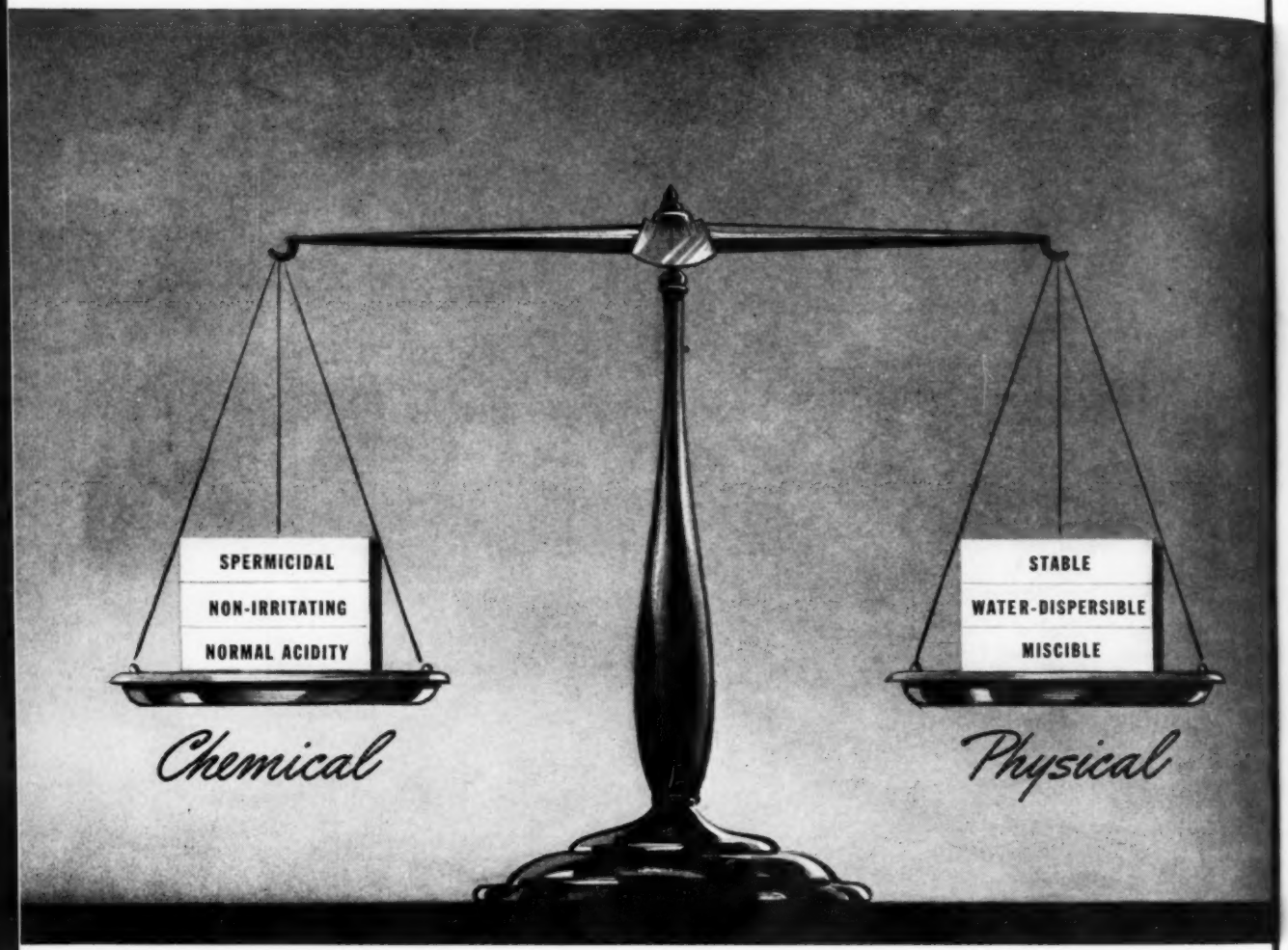

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